

***Role of natural factors in spatial distribution of archaeological sites,
during the chalcolithic period in Bostanabad, Azerbaijan***

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Received: 14 / 12/ 2015 Accepted: 28 / 09 / 2016

Extended Abstract

Introduction

When it comes to the ancient settlement patterns and how to set in a region, the role of environment and its infrastructure in a geographical landscape will be highlighted. Distribution of population and human settlements in a geographical area has a great influence on the structure and function of human activities. Not only will these distribution patterns be affected by social and cultural factors, they were highly dependent on natural phenomena; because nature is a context of human geographical activities.

In this paper, we have studied and analyzed the role of environmental factors in spatial distribution and configuration of human settlements during the Chalcolithic period in Bostanabad. For this purpose, we have identified and collected surface data of 55 sites including Chalcolithic works during 3 seasons of archaeological survey and using statistical techniques for data analysis. To accomplish this work, natural factors included surface water, rainfall, climate, altitude, vegetation, land-use, and slope have been evaluated.

The results have illustrated that the geographical features of the region, especially water resources, altitude, and climate were the most important factors in the formation of settlement patterns in the desired area at the Chalcolithic period, and the manner of set of these sites was dependent on these mentioned factors more than any other environmental factor in this district. The vital role of water, especially rivers, developed the sites in form of linear pattern along the rivers.

Materials and Methods

The data for this study have been collected from archaeological survey, and the librarian method was used to identify the sources and texts, use previous studies, and use the results of the excavations; then, the statistical methods were used to analysis of data. These field studies have

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been carried out during the years 2006, 2013, and 2014. We have conducted field surveys in seven rural districts western and eastern Abbas Abad in the first season, eastern western and eastern Owjan, and Sahand Abad in the second season, and central and southern Mehran Roud in the third season. The surveys resulted in identifying and recording a number of prehistoric, historic, and Islamic sites. From them, 55 sites are containing materials of Chalcolithic period. The analysis of the desired data have been entered in Geographic Information System (GIS) and its outcomes described by the maps.

Results and Discussion

Bostān-Abād relative chronology data were based on the study of collected pottery samples from the area and compared with the samples from the cultural layer in scientific exploration. However, in some cases due to their similarity with potteries from different sites, separating periods becomes quite difficult, and need scientific excavation or laboratory studies, as many factors contribute to the distortion of data in field studies; however, it has been attempted to use reliable data as far as possible. In this regard at the regional scale, data have been compared with neighboring regions outside the current area (Mesopotamia, Anatolia and the Caucasus) and, in the region scale, with sites of Lake Urmia basin and, in the settlement scale, with Kül tepe Hadi-Shahr and Köhne Pasgah tepesi sites.

According to the scattered works in the area (including pottery and surface objects), 11 sites have Dalma pottery culture dates (characteristic of the Early and Middle Chalcolithic of Azerbaijan) and 52 sites have CFW (Chaff-Faced Ware) pottery culture (Characteristic of the Late Chalcolithic of Azerbaijan), which 8 sites last from the Early-Middle to Late Chalcolithic. Regarding the type, extent, situation of settlement, etc., we can claim that in Bostān-Abād we face both permanent and temporary seasonal settlements in the Chalcolithic period.

Conclusion

According to the tables and statistics, water played an important role in the formation of settlements, so that 62% of the settlements have been built at a distance of less than 500 meters to the main water sources (rivers permanent and seasonal). This character is evident in both the Early-middle and Late Chalcolithic period in the region, which 33 sites across 52 sites were attributed to the Late Chalcolithic period, and 8 sites from the 11 sites in Early-middle Chalcolithic period (62% of the total collection) are in this distance. The vital role of water, especially rivers, caused sites have been made in form of linear pattern along the rivers.

Elevation is the other main factor in establishment of the Chalcolithic settlements in the area. Charts and maps show Chalcolithic sites in Bostān-Abād extended to highlands; as about 75% of the sites have been established at an altitude of 1750 to 2100 m above the sea level. Altitude has a direct relation with temperature reduction and increase in rainfall. When the weather become warm, these factors lead to accumulation of snow, then, creating feeding nests of streams and melting saved snow which is responsible for having water resources, pastures and vegetation in the summer nomads.

Keywords: *Bostanabad, chalcolithic, linear pattern, natural factors, spatial distribution.*