Early Bronze Age settlement system and village life in the Jenin Region/ Palestine : a study of Tell Jenin stratigraphy and pottery traditions

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CHAPTER 2

THE CULTURAL LANDSCAPE OF THE TELL JENIN REGION

1 INTRODUCTION

Archaeological models treating rural-urban settlement systems in Chapter 1 attempt to reconstruct the economic sustainability and population trends during the past. This chapter attempts to apply models to data from Jenin region. It focuses on applying site catchment analysis to reconstruct the adaptation of small-scale settlement systems to the region's natural resources. However, in doing a site catchment analysis of the EBI period, an attempt is made to define the Jenin region by combining historical, geographic and archaeological remains.

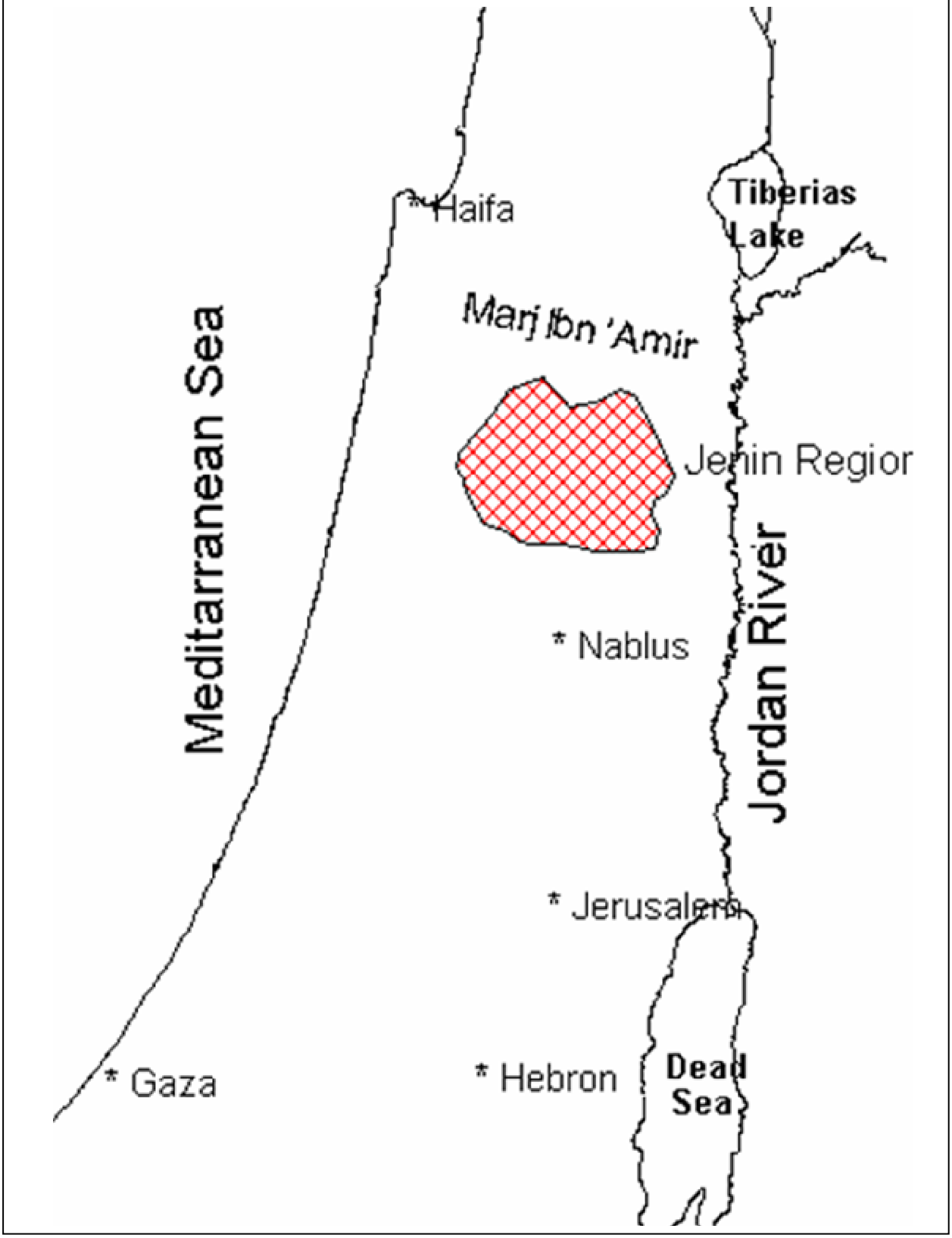
The objective of this chapter is to reconstruct the integration of the Early Bronze Age village life in a space that for a long time already had been occupied. If the accumulation of knowledge through time defines cultural traditions, then the forces creating the cultural landscape of Tell Jenin may have changed little since early human settlement. The issue of space and continuity is debatable. On the one hand, Hodder's (1995) collective memory is one force to understand cultural continuity and change. Bintliff sees continuity as a very difficult issue to prove from archaeological records, especially in cases where a new population replaces the old one and adapts to the old culture (Bintliff o.c.). In this kind of argument, the settlement system can be studied in accordance with its own development. As argued before, the identity of the people cannot be proven. However, it is the knowledge of the space that is one factor to understand human settlement. It can be assumed that reoccupation of the same space in different periods may partially reflect knowledge of the place. However, archaeologists cannot do much to identify people who lived in the past, but will do settlement system analysis of their habitat. To examine this, an attempt is made to create a settlement pattern model based on ethnographic, historical and archaeological information. The historical data reviews the major historical sources relevant to the development of the cultural landscape.

Archaeological data are derived from the surveys conducted by Birzeit University as well from other survey results, particularly those published by Zertal (1988, 1992-96, and 2000). Ethnographic data focus on the pottery traditions of the Jenin region. The data were collected by myself during several visits to Jaba' and Y'abad potters. Hopefully, combining these data will increase our understanding of the cultural landscape of the Jenin region as it developed through time.

2 A FREAMEWORK FOR DEFINING THE JENIN REGION

Because many Palestinian regions are open to external cultural exchange, the melding of various cultural elements in a 'local' culture is difficult to observe. As I have argued before, cultural elements are difficult to separate. The regional boundary is often difficult to discern. Archaeologists used different criteria for defining regional boundaries: historical, topographic, and political factors (Greenberg 2002: 5). The most common criterion is applying historical divisions and names related to the Bible and being influenced by historical accounts. It should be noted that boundaries were arbitrary, and therefore encouraging the use of Bintliff's critique for defining sites catchment by

Figure 1.1.: Location Map of Jenin Region



guessestimates. For archaeologists one way to define a region is by following ethnoarchaeological models and find the interrelations among the material culture, people and space (David and Kramer 2001). Most commonly used are style and technology.

Certain views, however, argue for a political network (rather than a region) in defining cultural systems. These networks may be seen in small states and developed to larger systems. In this way defining a region depends on site catchment analysis models and particularly to define the "*production zone*" (Wilkinson 2003). Therefore, it is possible to define an economic site zone or catchment. A distinction is made between a region and a site zone (site catchment area). A region is defined on the basis of archaeological data, economy, and ethno-historical resources (see Rice et al. 1989). A site zone is the area surrounding the territory in the immediate vicinity of the settlement

Another issue is settlement shift which has not been covered fully by regional archaeological studie. It is often assumed that abandonment is the last stage of a settlement, but actually it is not. As a result of abandonment models discussed in Chapter 1, no single case can be found where the population settlement can be terminated, even in case of a disaster. Those who survive a disaster will shift to new locations, for example. During writing this report, the Iranian city of Bam was hit by an earthquake killing almost 75% of its inhabitants. This severe tragedy caused the dispersal of the city's population, but at the end the survivals continue living in the space.

In a similar way, historical sources recorded a plague that hit many areas including Jenin city (see Chapter 3). Archaeological data do not confirm a total abandonment and dispersal, but rather a continuity of settlement occupation following the plague. Defining any region could be based on the assumption that people move within the same zonal catchment because of their knowledge of the space and its natural resources. They keep utilizing the same natural resources.

Under this assumption, the population may not occupy the same particular spot. They continue their occupation in new localities not far from the settlement nucleus. This seems to be the common phenomenon observed after the abandonment of a site. In case of EBI of Tell Jenin, it is more likely that the population continued living in nearby sites like Karem Jenin or Kh. Bal'ama.

On the other hand, a region's landscape is a wider geographic entity, composed of contemporary settlements and forming a socio-economic network. It seeks a self-dependent economy. In a study of household economy of existing villages, Saleh et al. (1992) show that village households are self-dependent if they command sufficient local resources. They are counting more on the produce of the same village. In cases of a shortfall of natural resources, the villages obtain products being not produced locally from other regions. Similarly, by contrasting the agricultural products of the 16th century with the EBI, Finkelstein and Gophna (1993) reached the conclusion that the region north of Sabastiah produced surplus agricultural products.

This factor leads to intensify the population of the region. It is expected that a strong economic foundation is a factor in defining the region's boundaries. Both the region and the site zone are significant entities identifying the cultural landscape.

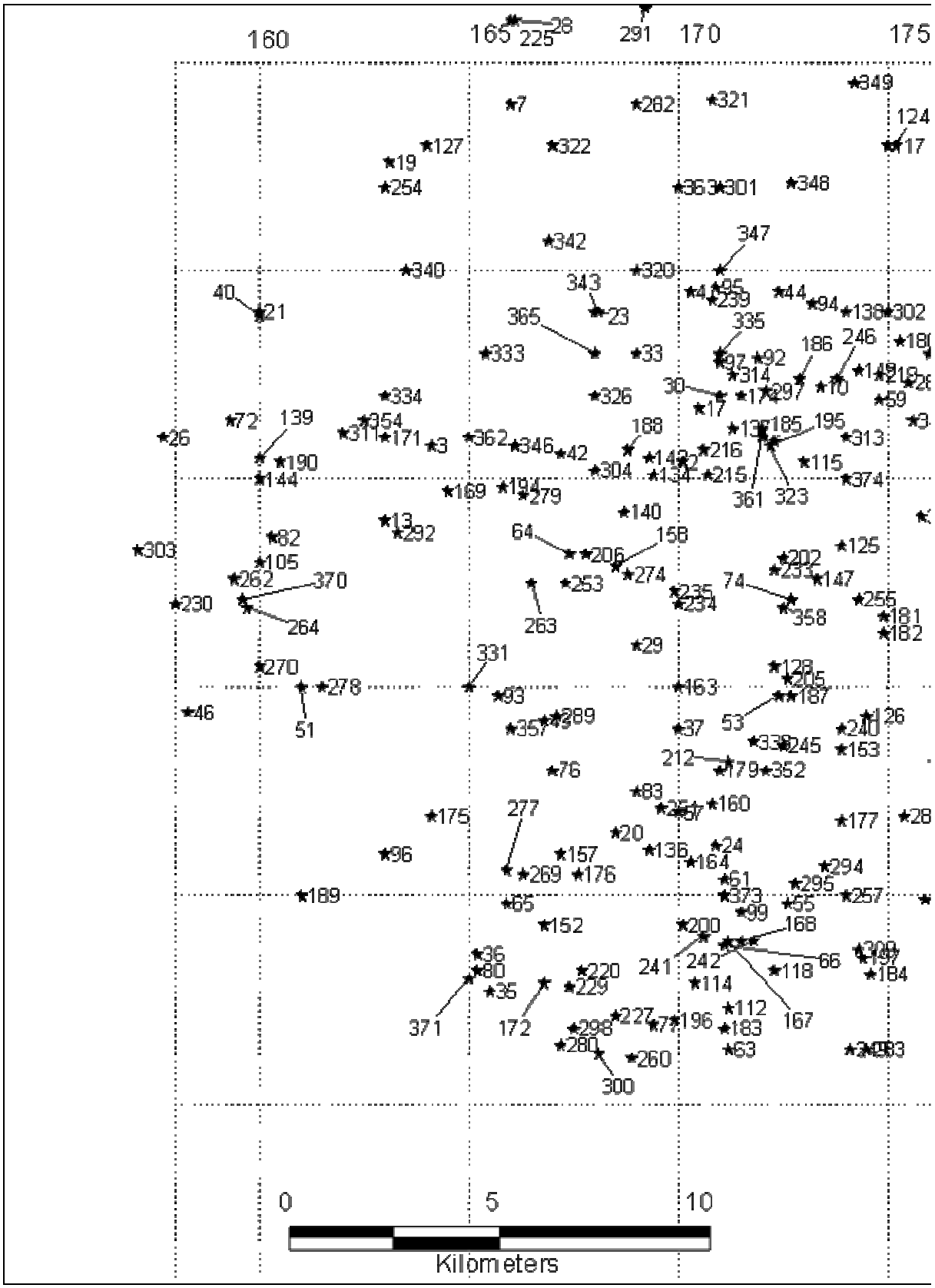
In the following section I will attempt to reconstruct the regional and cultural system by defining its four inter-related trajectories: ethno-historical data, archaeological data, environmental resources (natural resources, topography and geography), and socio-economic restrains.

3 A SURVEY OF ARCHAEOLOGY AND HISTORY OF THE JENIN REGION

3.1 HISTORICAL SUMMARY OF THE JENIN REGION

Since earliest definition, Marj Ibn 'Amir was a 'partition zone' between the northern Galilee Mountains and the Nablus mountains. The valley also marked an administrative and political boundary line between various interior divisions. Based on the following summary, it is expected that the Jenin

Figure 1.2: Map of the Jenin Region Settlements (see Appendix A)



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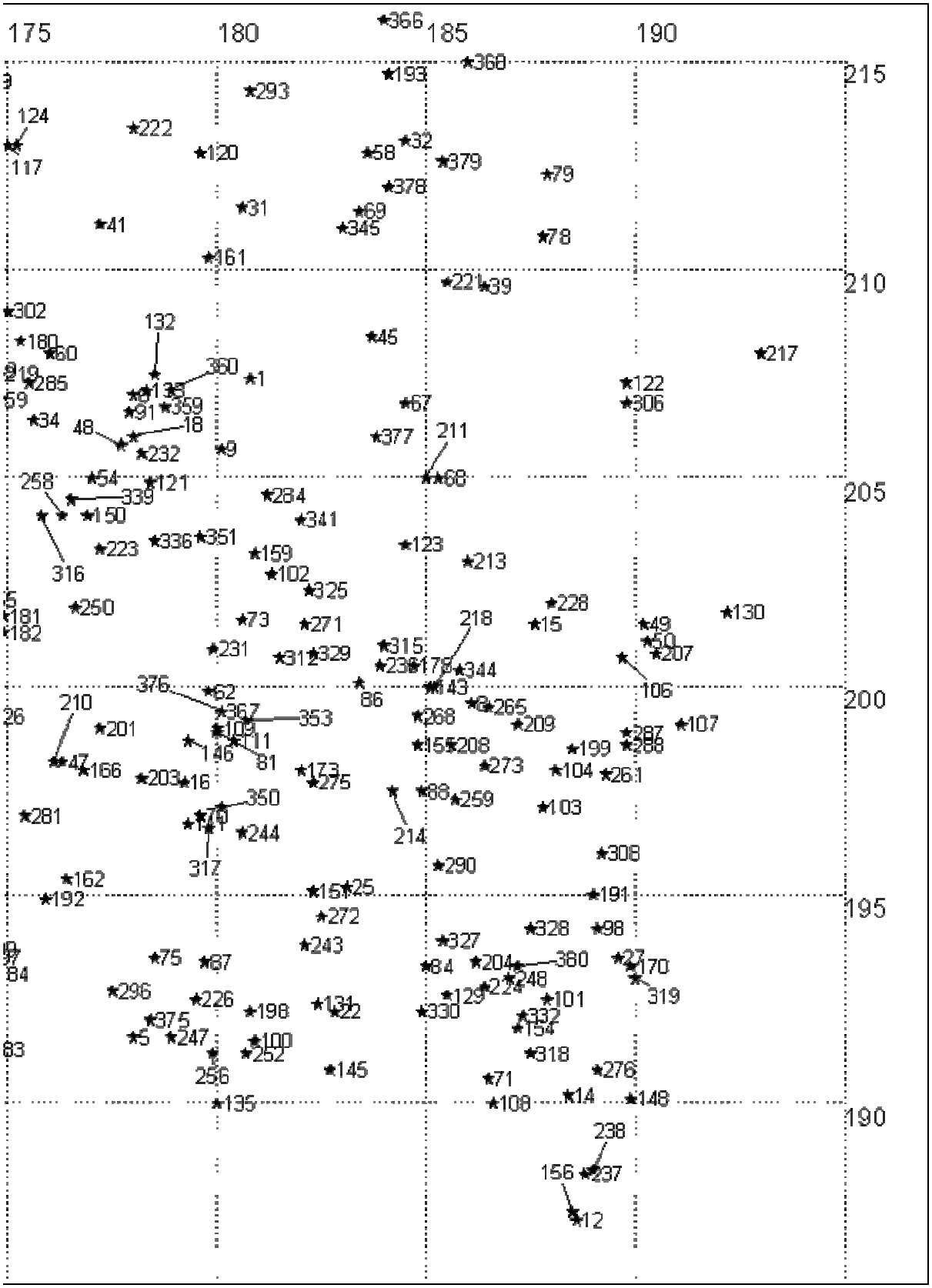


region is located at the northern periphery of the major Nablus Mountains (Figures 1.1 and 1.2). It is evident that the Jenin region boundary did not change much throughout history. At least four settlements were mentioned in the Amarna Tablets- Jenin, Ta'annak, Legion and Jalbon. Later on, the Biblical tribal division of Palestine divided the Jenin region between the territories of Manasseh and Issachar. Only a few settlements were mentioned in the Bible. These are: 'Anin (Anem), 'Ariel, Tell Jenin (*'Ein Gannim*, or Beth Haggan), Kefr Adan (En Haddah), Rummaneh (Haddad Rimmon), Tell Ta'annak (Taanach), Fuqua' (Aphek?), Jelame (Kaliimna), Jalbon (Gelbus), Nuris (Beth Shitta), Khirbet Bal'ama (Ibleam).

During Roman times, the Jenin region was a division boundary between *Palestina Secunda* and *Palestina Prima* (Avi-Yonah 1940: 163-168). The capital of *Palestina Secunda* is Caesarea. Under its administration, Sabastiah included ten villages-Atarus ('Attara), Belmoth (Kh. Bal'ama), Beneslis, Dothain (Dothan), Geb'a (Jaba'), Ginea (Jenin), Kfur Sila (Sila), Merrus (Nuris). Scythopolis (Beisan) was the capital of *Palestina Prima*. It also included ten villages: Abelmea, Aenon, Araba, Beela, Bethmaula, Euthenaneth, Gulbus, Rooba and Salim. The total number of localities recorded by the Roman sources is 20 settlements. Based on archaeological surveys, only five had remains from the Roman period. The remaining fifteen settlements had archaeological remains, which belonged to other periods than Roman (Ibid).

Eusebius is a main source for the Byzantine period. He attempted to relate the villages, which existed during his time to the Bible. He mentioned only six settlements in the region ('Attara, Dothan, Jalbon, Lajjun, Ta'annak and Zir'in). The same Roman division remained during the Byzantine period.

Bilathari's records of Palestine (died 892 A.D.: p. 156-161) divided the country into *Jund Falistin* and *Jund el-Urdun*. The boundaries of these districts are the same as the former Byzantine division. He pointed out that the Samaritans, a residual Jewish tribe who had lived in the Nablus Mountains and in localities north of Nablus city before it fell under the Arab Islamic rule in the beginning of the 7th century A.D..

The same division survived in later centuries. The Jenin region was still divided between *Jund el-Urdon* and *Jund Falistin*, with the Jenin region included in *Jund el-Urdon* (Hamawee 1225: 2/202). Then it was added to *Korat Beisan* (Ibn Khardathbah 864: 78). Later it was added to *Mamlaket Safed* (Ansari-Dumashki 1300: 210-212), which included 1200 villages (el- Dhahiree ca 1468: 44).

The Ottoman administration divided the area between *Liwa Lajjun* (55 villages), and *Liwa Nablus* (226 villages). *Nahiat Jenin* was a sub-division within *Liwa Lajjun* (Hutteroth and Abdulfattah 1977: 125 ff). The Ottoman records of the 16th century recorded 62% of the presently existing villages (ibid). Eight villages (or 11% of the total villages) are no longer occupied. They are identified today as archaeological sites. As indicated by archaeological surveys, thirteen settlements were not mentioned by the Ottoman records but had archaeological remains, which belonged to the Ottoman period. Some settlements, which included remains from this period, were described as living villages by the Survey of Western Palestine two centuries later. However, one should be careful about the Ottoman *dafter* because it was not systematic in recording villages.

Robinson (1857: 149-180) described villages in the region. He by-passed many villages and did not note most of the archaeological localities. He failed to document 51% of the settlements in Jenin region. However, he described a few villages in ruins, which were described by Guerin two decades later as occupied settlements. Robinson concentrated on connecting the names of the villages to sites mentioned in the Bible.

Guerin (1868: 311 ff) made an attempt to follow Robinson's steps. Unlike Robinson, Guerin was more comprehensive in recording settlements of the Jenin region. He covered around 70% of the villages and archaeological sites. However, he documented only fifteen

settlements (11% of the total archaeological sites) (Guerin 1868 II: 311 ff).

The *Survey of Western Palestine* (SWP) was even more elaborate when listing the Jenin region settlements, 58 villages or 82% of the total villages, which exist today were recorded. At least two villages mentioned by the Ottoman records, and continuing to exist until the present, were not recorded by the survey. Twelve other villages were recorded as archaeological sites, or in ruins. Four villages were mentioned by this Survey and not by other sources. Most of the villages continue to exist until now (Conder and Kitchener 1881 II: 44 ff).

During the British Mandate, little of the Ottoman division was changed. The Jenin region became a sub-district of the Nablus district, which included 67 villages (Government of Palestine 1945). The British recorded only 60 villages in the 1945 census.

The Jordanian rule kept the British division except with a new boundary as a result of the 1948 war. Thirteen villages were destroyed or occupied by Israel after the war (General Bureau of Statistics 1961: 4- 6). Four other villages were not included in the census, but were recorded in the British and Israeli census. Five new villages were established. As a result, a total number of 54 villages existed during the Jordanian time.

After 1967, the Israeli occupation modified the boundary of the Jenin region to include five more villages in the east, for example, Tubas (Benvenisti and Khayat 1988: 125-137). Four villages were not mentioned by this source but were known in other records.

In conclusion, dealing with data on both living and archaeological localities has two problems, the first being the problem of village names. Some villages have more than one name. Some different site names are a result of transliteration. Others changed their names through time. To solve the problem of identifying the alternative names for the same site, all the available maps were consulted. Most often is the Survey of Western Palestine map. All the maps for the region were digitalized to facilitate easy checking of the data and obtain detailed interpretations.

Second to establishing a list of village names is defining the boundary of the Tell Jenin region that includes them. The changing boundary of Jenin region is a result of more than political and administrative fluctuations. It is important initially to justify the concept "cultural boundary" in defining the regional administrative boundary of the Tell Jenin. Because, many Palestinian regions are open to external exchange, the melting of various cultural elements in a "local" culture is difficult to observe. For this reason, it is hard to distinguish a clear cultural boundary between one region and another. Instead, a distinction can be made between a region and a settlement system (site catchment area, a niche or a settlement chamber).

A settlement system is used as an analytical unit to define the sustainable area of land and resources. Each system is defined according to arbitrary units, identified by the Thiessen polygon method or a 5 km radius of 5 km. The Thiessen polygons were obtained digitally by MPINFO *voroni* program. The settlements within this boundary are contemporary, under the assumption that a settlement system is made out of contemporary settlements that may form a political, economic and social network. It is in a way self-dependent. In case of a shortfall of natural resources, the region must obtain cultural items from other regions in exchange for products that are not produced locally. The following is an attempt to clarify these statements through presenting data from the Jenin region.

3.2 ASPECTS OF TRADITIONAL VILLAGE OF THE JENIN REGION

Ethnography as history bears many problems to archaeologists, because ethnographers and archaeologists are interested in two different stories (Salem 1986). Again, one interesting aspect of ethnography is the description of the various material cultures. Unlike historians and travellers of Palestine, ethnographers cover the more detailed aspects of the living culture. The intensive ethnography done alongside *SWP* was

fascinated by the peasants' way of life (Clermont-Ganneau 1875, Conder 1878). In the Jenin region, we have only one detailed ethno-archaeological study, namely Ta'annak village (Ziadeh 1985). Dabagh's (1964) encyclopaedic survey of the country has been useful to extract information and bibliography of the various villages in the region.

Sections 3.2.1and 3.2.2 present two historical and ethnographic cases which will develop our understanding of the region. The two examples are useful in the attempt to develop a model of ancient land use and settlement system development.

3.2.1 **Local Chiefdoms: The Case of Arrabeh Village**

Arrabeh is located at a strategic point between Nablus and Jenin (Figure 1.2). The main historical road crossing the Jenin region touches the village boundary. Though, this road was avoided most of the time. Arrabeh village is located at the southern edge of a fertile plain, named after it, but historical accounts referred to it as the Dothan Plain (Figure 1.2). The plain is connected by a wide wadi to the great plain, Marj Ibn 'Amir. During historic times, villagers cultivated this area, and until today these two had `the most fertile lands in Palestine. As we know, farming was the major economy in Palestine during the 19th century. Land ownership is the people's wealth and treasure. The more lands owned, the more power the clans will gain. Gradually, farmers lost land ownership to other powerful families.

Arrabeh is watered by the nearby spring of Bir el-Hafira, which is one of the major wells in the region. However, the main water source is rainwater, collected in cisterns. The location of Arrabeh contributed much to its selection as a regional stronghold of the Abdul el Hady faction. It is comprised fertile lands, a strategic location on top of a steppe mountain, and a location near a main road leading from north to south.

3.2.1.1 **ARCHAEOLOGICAL AND HISTORICAL ACCOUNTS**

Historically, Arrabeh is to be identified with *Arraboth*. This name is mentioned in the 14th century B.C. Egyptian Amarna Text. No archaeological evidence has been found as yet to confirm its identification. Also, Arrabeh was one of the listed Byzantine villages. It had one of the earliest Byzantine churches in northern Palestine. Guerin (1868) described the remains of this church. Archaeological survey indicates that the village is located above a site dated to the Roman, Byzantine and Arab-Islamic periods (Zertal 1992-96).

Arrabeh was mentioned by Abdul el Ghani el Nabulsi in 1184 A.D. He visited the Maser of 'Arable and described it as covered with a magnificent vaulted chamber, known locally as the cave. The Great mosque built by Hussein Abdul el Hady in 1820 was built on top of this cave. From this description, we also know that Arrabeh village existed at that time. It continues to be occupied until today. The old village core is more likely dated to the Mamluke times and earlier. This was the same village of the 1696 A.D. Ottoman records that showed it had 112 inhabitants. Elaya Shalabi, the Turkish traveller during the 18th century, noted that Arrabeh consisted of 100 houses. This was the time when Abdul el Hady settled in the village. It became the clan's stronghold.

The *Survey of Western Palestine* described Arrabeh during the time of Abdul el Hady as follows:

A very large village on the south slope of a ridge, the northern houses on high ground. There is a small mosque in the centre, and one or two large buildings, including the Sheikh's house. The water supply is entirely from wells within the village, and on the road-side towards the north. There is a ridge of very barren rock between the village on the south and the plain (Merj 'Arrabeh) to the north. Scattered olives grow round the village, but the immediate neighbourhood is very bare. The villagers are turbulent and rich, owning very fine lands in the northern plain (Conder and Kitchener 1881/II: 154).

Guerin (1868/II: 218) provided us with a

similar description, immediately following the destruction of the Arrabeh walls in mid 1950's. He stated that, "*It is divided into three quarters, one of which was once surrounded by a wall flanked with small towers. This wall is now in great part destroyed*" (Guerin 1868/II: 218).

One of the main eyewitness accounts is that of Mary Eliza Rogers. She visited Arrabeh at the end of February 1856 and stayed overnight (26th February) at Mohammed Hussein palace, the governor of Arrabeh:

We were still riding in the plain, but thorns and thistles had given place to fields of wheat and barley, and ploughed land, The sun was shining overhead, but rain was falling on the terrace hills before us where olive-groves and blossoming fruit–trees flourished ..... We rode quickly through it, descended into a narrow valley, at the end of which, on a rocky hill, brightened by a gleam of sunshine, we could see the town of Arrabeh, with its embattled walls and towers. After a very difficult ascent over smooth slabs of rock and loose stones, like a steep irregular stairway, we reached Arrabeh. It was past midday, and was pouring with rain, as we entered its great iron-bound, well-guarded gates. This is one of the best walled towns in Palestine. The houses all looked like small castles, so they are square, and with parapets round their flat, terraced roofs (More likely referring to the palaces from a distance) (Rogers 1989: 216-217).

In the 1931 census, Arrabeh had 554 houses and lived by 2500 inhabitants, an increase of about 300 inhabitants since 1922. The palaces had several wells attached to them. In 1945 it had around 3800 persons.

Figure 1.3: A general Photo of Sahel Arrabeh

3.2.1.2 LOCAL CHIEFDOM OF ABDUL EL HADY

One major source of the period is the local historian of Nablus, the Ihsan en Nimer historical account (Nimer 1975). The Abdul el Hady clan originated from the Shaqran tribe, one of the main tribes who inhabited the el-Qastel of Balqa'a. Following the 1669 A.D. revolution, their sheikh Ziben moved to Marj Ibn 'Amir and became the *Ameer* of Lajjun. After his death, his son Saleh inhabited Arrabeh, while his other son Jarrar inhabited Sanur (Nimer 1957). The clan faced a rejection of the local tribes (Nazlaih and Mashaiqa) and so he moved to Arrabeh. The village became their stronghold, while his uncle Jarrar took Sanur as their stronghold. Abdul el Hady's oldest son Hussein became one of the most powerful figures in Palestine during the late Ottoman period.

However, the Egyptian Governor Ibrahim Pasha granted the political power to Sheikh Hussein for his loyalty to the Egyptians. He supported the Egyptians and convinced the tribes (especially el Qasem) to support Ibrahim Pasha, in 1832. As a result, the Abdul el Hady clan governed all of southern Syria (most of Palestine). Hussein shared the feudal system. According to Mahdi Abdul el Hady (o.c.), the family had around 13,200 ha distributed over 45 villages in Nahiat Sh'arawieh esh Sharqiyah. Robinson (1857) mentioned that Hussein was very rich; and employed some two or three hundred yoke of oxen in cultivating Marj Ibn 'Amir. He built a fountain in Jenin, marketing his public spirit and extension of power beyond Arrabeh.

However, as this was not enough for the Abdul el Hady clan, they decided to extend their rule to those of Nablus, being ruled by their coalition clan of el Qasem. Suleiman was the oldest Hussein son, and was appointed the governor of Nablus replacing Mohamed el Qasem. As a result, civil war started between them and other clans, and also their sister clan

Jarrar. The war between these tribes was inflamed by rumours fed by the centralized power of the Egyptians, Ottoman and foreign consulates (Scholch 1986). Nimer (1975) reported that the Nablus governor plundered Arrabeh, and arrested Hussein Abdul el Hady forcing him into the siege of Sanur. The Jarrar family considered this a sign of hostility against them. Since then, the two factions were infused and fought against each other. It was the policy of the Ottoman central government to inflame the hatred between the factions. The country sank into a long civil war that lasted for about three decades.

The death of Hussein inflamed the civil war, for his sons accused the central power of killing him. This war ended with the siege and destruction of Arrabeh.

3.2.1.3 VILLAGE PLANNING AND PALACES IN VIEW OF THE EYEWITNESS ACCOUNTS AND ORAL HISTORY

The Arrabeh social plan during the Ottoman rule was divided between the feudal family of Abdul el Hady and the villagers who worked on the land. According to local inhabitants, Hussein Abdul el Hady was to pay land revenue to the Ottoman Sultan. The land came under their possession after many farmers could not pay the tribute to the Sultan.

Such social division reflects itself in the town planning. Arrabeh is divided into three quarters. The first is the old village predating the Abdul el Hady time; the second is the quarter living by the peasants occupying the western side, while the Abdul el Hady family quarter occupied the eastern side.

A heavy wall, built of terrace masonry, protects the eastern side. The wall had 7 towers, one of which is still standing today beside the town cemetery. The function of this wall is mainly to provide extra security to the family headquarter. But, it is also a setting for a prestigious location for the family members. A main gate leads to this area. The gate was well guarded. From the plain, the village is reached by a narrow stepped path reaching this gate. We know that the fortification of the village was the first to be destroyed by the Ottoman Army.

As many other villages, Arrabeh also had a tribal system based on family clans. In the traditional Palestinian context, one can see a spatial and social division. At the social level, a common village is divided into extended families. Extended family called *hamola* and nuclear family called *'ailah*. A council formed by the family heads runs the village. A head will run each family. The members of the village council are representatives of the major clans. Loyalty is hierarchical. It is first granted to the family head, then to the clan, then to the nearest town. Each region will be named after the main town, and the people will be identified according to their original region. So those from Nablus and its surroundings will be called Nabulsi, and those from Jenin are called Jenini … etc.

At the spatial level, a village is divided into quarters each quarter (*harra*) is composed of *hoshes*. Each *hosh* hosts an extended family. One room surrounded by a courtyard forms a typical *hosh*. Then this room will be extended by another. The extension is made by the oldest son. The other sons will add to the original room until the entire space is filled. Thus, the village communities became more crowded.

The village boundary is expanded after all the spaces are filled. In this way new quarters are established following the same pattern of filling the spaces, sometimes randomly and according to the family land ownership.

In some villages like Birzeit, a settlement shift is noticed. Gradually, the whole village was abandoned. Refugees and immigrants from other villages moved to it. The new village plan developed to an urban one with large roomy houses and private courtyards, streets and open spaces. While the village courtyards are built for the daily activities, the urban courtyards are built to give space for luxury and privacy of its inhabitants. However, it should be noticed that the impetus for such a change is coming from the

wealth of the relatives who lived abroad but not from those who remained in the village.

3.2.1.4 CONCLUDING REMARKS

This section has significance for understanding the development of chiefdoms in relation to the centre power. It was the central power which made the final decisions about the course of local chiefdoms through appointing and removing chiefs. But also this process was based upon the tribal power of chiefs. As noticed above, the new tribes who moved to Arrabeh had adapted to the new life and became actually a centre of power. The Jarrar and Abdul el Hady families were originally from the same clan. But each had taken power and made coalitions with the urban families of Nablus. These families had a direct connection with the Ottoman Sultan. Furthermore, the feudal system assisted in creating these powerful elites. The farmers "*fellahin*" had been overruled by them. After a while they adapted to the fellahin system of life.

The village spatial division also reflects the social one. The first quarter belonged to the "elite", formed of what is known the palaces (*qusur*) quarter surrounded by a defence wall. The second quarter is that of the *fellahin*, built by the allies and supporters of the elite family. This quarter is located next to and mixed with houses of the oldest village core formed by the original villagers. From archaeological point of view, the fortification walls and urban palaces will place such a village in the urban category. From a modern point of view, this centre of power will be hardly considered an urban nature.

The Arrabeh situation, among others like Sanur and villages known as the crown villages, was a centre of power whose main task was to collect revenue from the villagers. In this case, the more control of the land the more revenue. Arrabeh controlled and collected the revenues from more than 42 villages.

The family as a unit of power model agrees with many analyses of village life in ancient times and especially those who used Sahlins's mode of production concepts (Sahlins 1972). Villages of less than 5000 inhabitants may reflect the population mobility suggested above. This model is followed in the attempt to explain settlement systems in the EBI.

3.2.2 The Local Pottery Traditions of the Jenin Region

Because the focus of this study is on the pottery traditions as a measure of continuity, I limited the presentation of culture to the living pottery traditions. Two pottery traditions co-exist today in the Jenin region. These are the hand made pottery of Y'abad and the wheelmade pottery of Jaba'. While the wheel made pottery continues today, the handmade pottery ceased and was re-established recently by a potter's daughter as "art pottery".

3.2.2.1 Y'ABAD POTTERY TRADITIONS

The pottery of Y'abad is not made today for household consumption. Traditional forms of the recent past are now made as 'art forms' sold to local and Israeli markets. The potter who is working today learned the skill from her mother. She is therefore the latest potter in a long tradition.

Red slip burnished ware characterized the handmade pottery of Y'abad. Only a limited number of forms is made, mainly the cooking pot, casserole, brazier, frying pan, and bathing bowl (*wadaia*). The clay (*Trabet Fukhar*= pottery soil) of Y'abad is procured from the nearby fields. It is originally white in colour and

Figure 1.4.1: Y'abad Potter Kneading Clay

Figure 1.4.2: Y'abad Potter Making the Base from a Coil

Figure 1.4.3: Inserting the Handle

includes lime and shells. Clay sources are identified when a new house foundation is open for construction, or while digging a new cistern. As a consequence, access to the clay resource is limited. Often the one who found the clay source barter it to the potter in exchange for pottery products. The source of the clay preferably will remain a secret between both the land owner and the potter.

Clay is brought by cans (*tanakat*) or plastic buckets to the place of work. It is first crushed by a grinding stone (*madras*) into fine pieces. Then it is spread out to dry in the house courtyard. The woman I interviewed and observed in 1998 believed that it is very difficult to work with wet clay. Potters add calcite (*milah*) to the clay. Men collect the calcite from the neighbouring village lands. The calcite used by the potter is brought from *Banat Toreh*, a village of about five kilometres away.

The potter adds the clay to the non-plastics and kneads it in a tan box (lajjan). She adds one third of calcite to two-thirds of clay (i.e. one bucket of calcite to two buckets). Then she wets it with the appropriate amount of water. The paste is then soaked for two days (ytfashfesh) before it is kneaded by hands ('ajeen). Normally only the quantity to be used will be prepared. If extra clay remains, it is kept in a clean place and covered by a plastic sheet for later use.

The forming of the Y'abad pots is done in one or more stages (*marat*) depending on the size and the pot form. Cooking pots are made in four stages. Frying pans require two stages, and small bowls are made in one stage. The potter adds one coil (*rafa'a*) in each stage. Initially, the potter shapes the base. To do so, or "beating the base" (*tabat ka'aha*), the potter cuts a piece of clay from the kneaded pile. The clay ball is placed on a board of cartoon or a piece of tin and a wall is raised a few centimetres above the base. The shaped clay is left to dry in the shade until it becomes leather hard which can take the entire morning until noon time). After that, another coil is added (*rafa'a*). The coil is made thick to retain moisture. Then it is beaten by both hands raising the wall of the vessel up to the middlepoint of the pot. The shaped half is left to dry until the next morning when another coil is applied to form the neck and the rim.

Handles are attached vertically or horizontally. A vessel with horizontal handles is called *qidra* which is also the word for cooking pot. A vessel with vertical handles and a wider mouth is called *tabakha* or casserole. Both forms serve the same function.

The lid is made in one stage and is fabricated much like the base. It is shaped into a small bowl with a little handle placed in the middle. The shape of the lid is cut in an opposite angle to the

Figure 1.4.4: Y'abad Pottery: Cooking Pot and a Brazier (Kanon)

cooking pot rim to assure that both rims fit well together.

All the forms are slip coated and incised. The decoration involves applying a slip made from the same clay, at times mixed with a red soil (*samaka*) giving it a reddish colour. The vessel surface is coated with the slip, using a piece of cloth. At the same time, immediately after slip application, the surface is burnished using a sea shell (*'arakah*). The burnishing process is called *tadleek*.

The form is left to dry for a period of at least four days to a maximum of one week. It is identified as completely dry when it "becomes like a hard dry loaf of bread".

The firing process (*shawee*, *mashwa*) is done in a fire pit (Figure 1.4.5). To make the pit, the potter digs a shallow small hole into which she stacks the pots upside-down, 15-16 pots each time. However, the potter does not fire more than one form type at a time. The cooking pots are fired separately from the frying pans because

Figure 1.4.5: Y'abad Potter Firing the Pots.

they need more heat. The braziers (*kanon*) are also done alone because they need more firing than the frying pans. The small forms are fired separately, given that they need less firing.

Cow manure (*kras zibel*) is the primary fuel. Wood, charcoal and remains from olive pressing (*jift*) are also used as firing fuel. The wood and *jift* are laid under the pots and the charcoal is placed on top. The potter determines how to control the firing process by the colour of the pots. While the pots are black, she continues to feed he fire with fuel. She stops feeding the fuel when the pots turns red. Then she waits until the pots cool down, before removing them from the firing pit.

3.2.2.2 THE WHEEL MADE POTTERY OF JAB'A

Today only one potter, Abu Ahmed, is active in Jaba'. The workshop of Abu Ahmed began about two centuries ago. It consists of two clay basins (called *joret el- sool*), which are located outside the workshop proper. Clay is prepared out-of-door.

The clay of Jaba' is owned by the potter's family and is brought from the nearby lands about 1.5-2.5 km away from the workshop. To bring clay to the workshop either donkeys or tractors are used. Raw materials are left to dry in the sun for few days until fully dried. If the clays are moist, they will not dissolve in water.

Two types of local clay are mixed together,

Figure 1.5.1: Jaba' Workshop

white clay (ez-*zamharee* or *howar*) and red clay (*samaka*). The potter mixes the two clay types in equal quantities resulting in a rosy colour after firing

The clay is prepared in the common (*et-tasweel*) method. First, the clay is soaked for one day in a barrel or a soaking basin (*joret es-sool*), in order to separate the heavy and light particles. While it is soaking, the potter stirs it, removing stones and other hard objects. Then it is moved to the next basin. In Abu Munir's workshop, the basin measures four by four metres and 75 centimetres deep. The prepared clay is left to settle for three days after which it is moved to an area in front of the workshop, and is left to settle for one week. The clay is then brought into the workshop where it is stored in a corner. Abu Ahmed uses a deeper clay basin, which is about four by four meters long and four meters deep. The clay is left for one week to be dissolved. It is used to prepare a quantity of clay sufficient for the entire winter. He prepares three basins a year. He works all the year around, frequently during the winter months.

Amongst other Palestinian potters, the potters of Jaba' had a distinctive technique for making the water jar (*jarra*). Instead of beginning with the base, the potter starts with the neck. The jar was made in three stages. In the first stage the neck is shaped and left to dry for few hours. This process is called *tajlees*. The lower part is made thick and heavy with clay. Then it is placed on a mould (*kaleb*) and the walls are lifted or raised (*fateh*). The half complete form is placed on the wheel again and the lower part is raised gradually to close the base. During this process the potter uses a metal scraper to pull up the clay.

In Jaba', Abu Ahmed, however, decided to use the more common traditional technique of

Figure 1.5.2: Jaba' Potters Making the Storage Jar

Figure 1.5.3: Jaba' Potters Making the Storage Jar

closing the base first and then he continues with a separate coil. He maintains that this process is easier and faster than the traditional Jaba' technique described above.

The water jugs (*ibreeq* and *sharbah*) are made in three stages and Abu Ahmed uses the same terminology to describe each stage. However, there is one difference. The walls are sometimes made thick, and in order to thin them he shaves (*tamsah*) them again with a thin metal scraper.

Abu Munir is built entirely from local resources. The kiln had failed many times because of a leak causing moisture to penetrate inside. Abu Ahmed's kiln is larger in size, holding more than 500 pots. During a visit to the potter's workshop, we found that he was making a new smaller kiln next to the old one. It is built to fire smaller quantities of pottery, since the old large kiln is difficult to use for firing the smaller types of vessels.

3.2.2.3 **POTTERS' ECONOMY**

The pottery of Jaba' and Y'abad is not made entirely for household consumption. Except of

Figure 1.5.4: Jaba' Potter M. Yunis and his Son at Work

some forms, like the water pitcher, all the other pottery is made for the tourist market. Two major markets are found. The first is the Israeli market. The demand for certain forms as art pieces is high. The second is the local market. An astonishing fact is some pottery forms, made by Abu Ali and Hebron potters, were sold by the potter of Jaba'. These forms are kept there in case the workshop products fall short for the market demands.

The two traditions existing today have similarities and variations that may be significant for understanding the EBI pottery for Tell Janin.

Production Location

The Jaba' pottery is made in a special workshop; the Y'abad pottery is made in the house courtyard. In the latter case, it is not necessary for the pottery production centre to be found in a particular site; rather it can be anywhere in the village. The workshop is usually located on a specific spot outside the inhabited area, as is the case with many Palestinian pottery workshops: Abu Ahmed's workshop is located at the northern edge of the village on a high spot.

Manipulation of the clay Resources

Four factors affecting the use of clay resources of Ya'abad and Jaba'.

1. The coiled pottery of Y'abad is made from one clay type, while the wheel thrown pottery of Jaba' is made from a mixture of two clays. This

mixing of clays is practiced by many Palestinian potters who use the wheel throwing technique, for example in Hebron, Gaza or 'Aqabet Jaber.

2. There is a permanent primary clay resource for the workshop industry, which is the main factor determining the location for a potter's workshop. Each workshop is located nearby the clay resource for the need of clay all the year around. Because the hand-made pottery is produced on a seasonal basis, the clay need not be available all the year around. The clay resources for the latter are discovered by chance.

3. The Jaba' craft specialists prepare their clay in large quantities sufficient for more than one production cycle. The Y'abad potter prepares her clay only in an amount that she can use in a given time.

4. The Y'abad potter always adds calcite and grog non-plastics. From a technological point of view, temper is added to reduce the plasticity of the clay. The Jaba' potters achieve this result by mixing two clays together. Abu Ahmed was advised by other potters to add sand to the clay to make it stronger,

Manufacturing Techniques

In both traditions, the pottery is made in stages. In Y'abad the number of stages depends on the vessel size. The larger pots require more then three stages. In contrast, for Jaba' pottery, the number of stages needed depends on vessel form rather than size. Regardless of size, closed forms in Jaba' are made in four stages, while the open forms are made in two stages.

Surface Treatment

The potters of Y'abad always apply a slip to the surfaces which is then burnished. Often a simple incised line may be added. The burnishing is done to provide a nice looking surface by hiding the non-plastics and other technical defects. The wheelmade pottery of Jaba' is decorated with an incised line or an incised rope design. Recently the pots are painted to fulfil the market demands. In certain cases the pot is painted to hide failure in the production process, such as a firing crack or a bent surface.

Market and Innovation

The forms made by the potters of Y'abad are more specialized and strict than the forms made by the potters of Jaba'. If we use the term *innovation*, then this refers to the potters of Jaba' because more market demand forces them to create competitive forms. The traditional forms are still the dominant types made by them, but sometimes these are modified by adding new decorative features or other accessories. In fact, the potters are forced to follow the traditional way of making pottery, making the base as described above, because such forms are more acceptable.

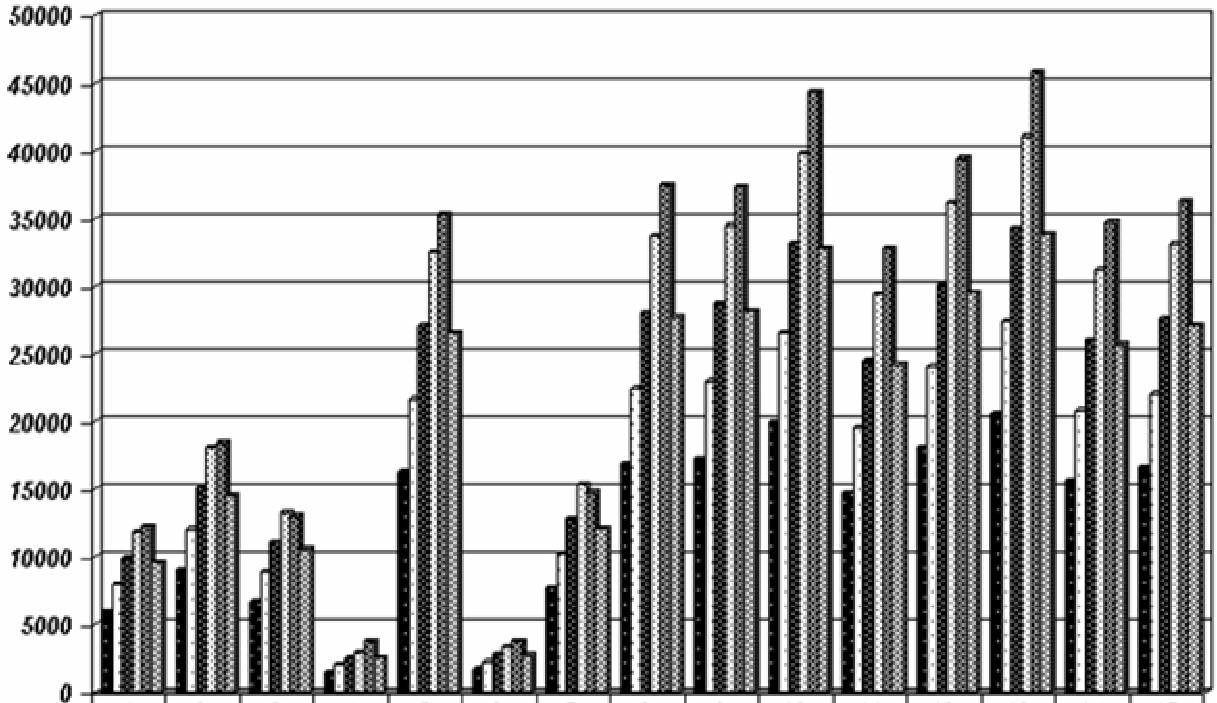
Although the pottery of Y'abad is made for the market, there is no change of the forming method and also the forms themselves did not change.

In conclusion, both traditions have their own technological method, which has not changed much in the past few centuries. Knowledge of these methods helps to develop insights into the techniques used on EBI pottery, with regard to workshop location, raw materials, and manufacturing techniques, including surface treatment. The relevant comparisons are made specific at the end of this dissertation.

3.3 PATTERN OF SETTLEMENT OF TRADITIONAL PALESTINIAN VILLAGES AS A MODEL FOR RECONSTRUCTING JENIN REGION SETTLEMENT SYSTEMS

This section deals with a reanalysis of the statistical data provided by the British Mandate for the traditional villages. It may lead to various conclusions to model ancient site catchment analysis. The selection of these data in particular is of significance since the area was at the edge of major political and economic changes. As was indicated above, most of the traditional way of living was maintained through the ages. The villages may have a sort of dynamic continuity described by McGlade and van der Leeuw (1997), but practiced by the same population.

Figure 2.1.1: Population Estimates following different Coefficients



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
150	5927	9036	6636	1476	16226	1661	7665	16833	17223	19907	14675	18050	20531	15606	16539
200	7902	12048	8848	1968	21634	2214	10220	22444	22964	26542	19566	24066	27374	20808	22052
250	9878	15060	11060	2460	27043	2768	12775	28055	28705	33178	24458	30083	34218	26010	27565
300	11853	18072	13272	2952	32451	3321	15330	33666	34446	39813	29349	36099	41061	31212	33078
Jenin V.	12271	18385	12978	3740	35320	3713	14744	37450	37332	44352	32779	39443	45857	34693	36262
Average	9566	14520	10559	2519	26535	2735	12147	27690	28134	32758	24165	29548	33808	25666	27099

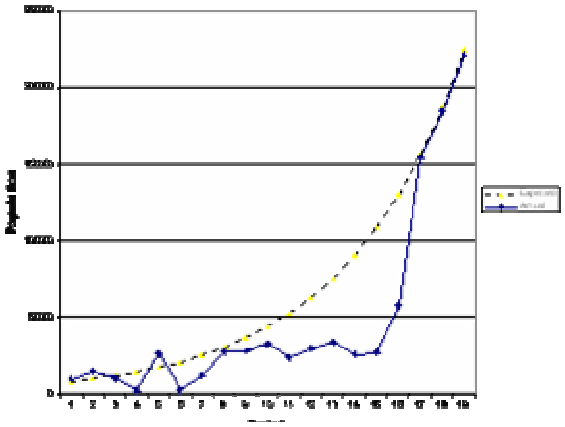
Accordingly, the following statistical population coefficients can be reached (Table 1.1, Table 1.2).

3.3.1 **Traditional Villages as a Model of Population Estimates and Site Catchment Analysis**

In attempting to find a proper coefficient to estimate the ancient population, the exponential population growth was tested against several coefficients starting from 150 per/ha to an average of the Jenin villages (293 per/ha) (See Chapter 1). It was noticed that the growth of the current villages was very high in relation to the others.

Figure 2.1.1 shows various population estimates by using various coefficients of 150, 200, 250, 300 per/ha, and finally an average of all the above coefficients. Figures 2.1.2 and 2.1.3 show the development of the actual census against the expected exponential growth. The expected estimate and the actual census (periods 17-19) did not match for the many coefficients.

Figure 2.1.2: Population Estimates Average of all Coefficients



Estimates using the 150 per/ha will fall short of the actual census done by the British and latest census. It may not be valid for earlier periods, while both lines match (Figure 2.1.3). The best population coefficient that will meet the actual census is a figure of 240-255 per/ha, based on the average of various coefficients. In Figure 2.1.2 both the expected and the actual census meets for the later periods. For example, the 1945 census tested against the several coefficient estimates indicated that Jenin population is about 57,745 persons. The population census for Jenin region was 154,173, 185,008 and 222,009 for the years 1960, 1988 and 1997 A.D. The 150 per/ha coefficient gives an estimate figure of 97,924, 117,509 and 141,010 persons for these years, while the figure for all coefficients average gives and estimate figures of 156,625, 187,950 and 225,540 persons. This makes the latest population coefficient closer to the real growth than the any other in estimating the ancient population.

Furthermore, it was found that the population density of the Jenin traditional villages ranges from 36 to 560 per/ha. Jenin city has a very low population density of 36 per/ha, Arrabeh is about 120 per/ha. Many small size villages with a built-up area of about one hectare had a population density over 500 per/ha. In a more general sense, about 50% of the high density settlements come with sizes of 1-2 ha. The mean population coefficient for Jenin settlements is 335 per/ha. It may be indicated that large size settlements had low population density coefficients, and so the highest population density occurs with small size settlements. One reason is that cities have more open spaces causing a lower density. So, in reconstructing ancient population trends, one had to look at this factor where larger built-up areas should have less dense population than smaller areas. Also, a rural population is higher than an urban one (Jenin city population is only 7% of the total population). This will agree in principal with the discussion in section 3.2 where village houses cluster into units for many reasons such as: social needs, forming secure compounds and preservation of fertile lands. Thus, in estimating the ancient population of the Jenin region, a population coefficient was calculated following the average of all the estimates. The coefficient figure then was multiplied by the settlement size.

Table 1.1: Land Use and Productivity in the Jenin region (1945 British Census)

Category	Number
Total Lands (ha)	*82805.2*
Total Cultivated Lands	*42365.1*
Cultivated cereals+ vegetables, fruits	*33251.3*
Trees	*9113.8*
Total built area (ha)	*283*
Total Used area	*42648.1*
Each hectare of Built area needs an area of cultivation	*149.7*
Each hectare of Built area needs a total area of	*292.6*
Total population	*57745*
Per/ha per total cultivated area	*1.4*
Per/ha per built up area	*204.0*
Per/ha in villages.	*312*
Average Distance for all villages from Jenin	*14*
Average individual production of all cereals (wheat, lentils, check pea, maize, fool)	*194*
Average Annual Individual Production of wheat only	*145*
Average hectare production of wheat per kg	*609*
Other products barely	*729*
Average production of other (trees)	*267*
Surplus (%)	*56*

Based on this the table which is attached to Figure 2.1.1 are the estimated figures for all the periods (The periods' key to this figure is: 1= Chalcolithic (Chalco), 2= Early Bronze Age I (EBI), 3= Early Bronze Age II-III (EBII-III), 4= Middle Bronze Age I (MBI), 5= Middle Bronze Age II (MBII), 6= Late Bronze Age I (LBI), 7= Late Bronze Age II (LBII), 8= Iron Age I (IRI), 9= Iron Age II (IRII), 10 = Persian Period (PER), 11= Hellenistic Period (HEL), 12= Roman Period (ROM), 13= Byzantine Period (BYZ), 14= Early Arab-Islamic Period (EISL), 15= Late Arab-Islamic Period (LISL). This table and Figure 2.1.2 show that the population of the Jenin region fluctuates through time. A rise in population is seen toward the end of the Chalcolithic, while a drop occurred at the end of the EBII-III. The cyclic growth and decrease in population agrees with many models presented in

Table 1.2: Average Summary of Various Village Sizes in Terms of their Needs

Size Cat.	Actual Size Value (ha)	Size Av. (ha)	Above Sea Level	Distant	Population	Per/ ha	Radius	Total Area	%
1	.2 to .9	.5	201	15.5	201	369	1.4	7267	31.1
2	1 to 1.8	1.3	294	15.4	516	354	1.7	9461	23.0
3	2.0 to 2.7	2.4	351	14.7	682	296	2.0	13591	23.0
4	3.0 to 3.6	3.4	205	6.5	952	280	1.9	11484	6.6
5	4.2 to 8.1	6.5	241	14.6	2332	403	2.3	17561	9.8
6	9.2 to 110.5	35.1	352	13.2	4076	257	3.6	42875	6.6
All Sites	.2 to 110.5	4.7	298	15.1	917	335.25	2.4	13801	100

Chapter 1. However, the population estimate for the Hellenistic and later periods may also reflect survey errors, rather than to be viewed only as a population drop. In particular, some surveys did not cover the area of the living villages where these periods are to be more represented.

3.3.2 Site Catchment, Land Use and Economic Production

The Jenin region had four topographic features, the mountain crests, the eastern slopes, the western slopes and the lower valleys, ranging from less than 100 meters to about 750 meters above sea level. Jabal Faqqu'a, the western mountain of Jabal Iskander and the northern valley of Marj Ibn 'Amir create a clear topographic constraints for the region. The southern boundary is connected to the Nablus Mountains, while the valley land of Marj Ibn 'Amir forms an open land to the northern regions. The eastern mountains drop sharply toward the Jordan Valley, forming a natural boundary line. The only access is via the Jezreel valley.

On the other hand, the region is watered by 42 major springs with an average annual discharge of 224,000 cubic meters per year. The majority of Jenin houses depends on water collected from dug wells.

The Jenin region had the most fruitful and fertile lands in the country. The highly fertile soil is one of the basic motivations for its continuous occupation during history.

ARIJ (1996) recent study indicates 4 major soil types (Figure 2.2.2):

1) The Terra Rossa, brown and pale Rendzinas which dominate the mountain and high small plateau; it forms 50% of the region soil.
2) The Brown Rendzinas and Pale Rendzinas cover the hilly slopes and lower valleys
3) Pale Rendzinas which is a very rare soil limited to the southern part, forming less than 1% of the total soil.
4) The Grumusol soil is common to the smooth topography, with materials of finer texture formed of alluvial and Aeolian sediments. It is one of the most fertile soils, and is found in the major valleys.

Table 1.1 summarizes the Jenin region economy based on the 1945 British records. The total area of Jenin is about 82,805 ha. The total built-up area is about 283 ha forming only 0.3% of the lands while more than half was cultivated (ARIJ had reported that 67% of the land is being used in recent time). The major cultivation is cereals and vegetables (40%), while 11% is cultivated with fruit trees. The remaining 50% of the land is classified as natural pastoral areas.

Figure 2.2.1: Digital Elevation Model of Jenin Region (ARIJ 1996)

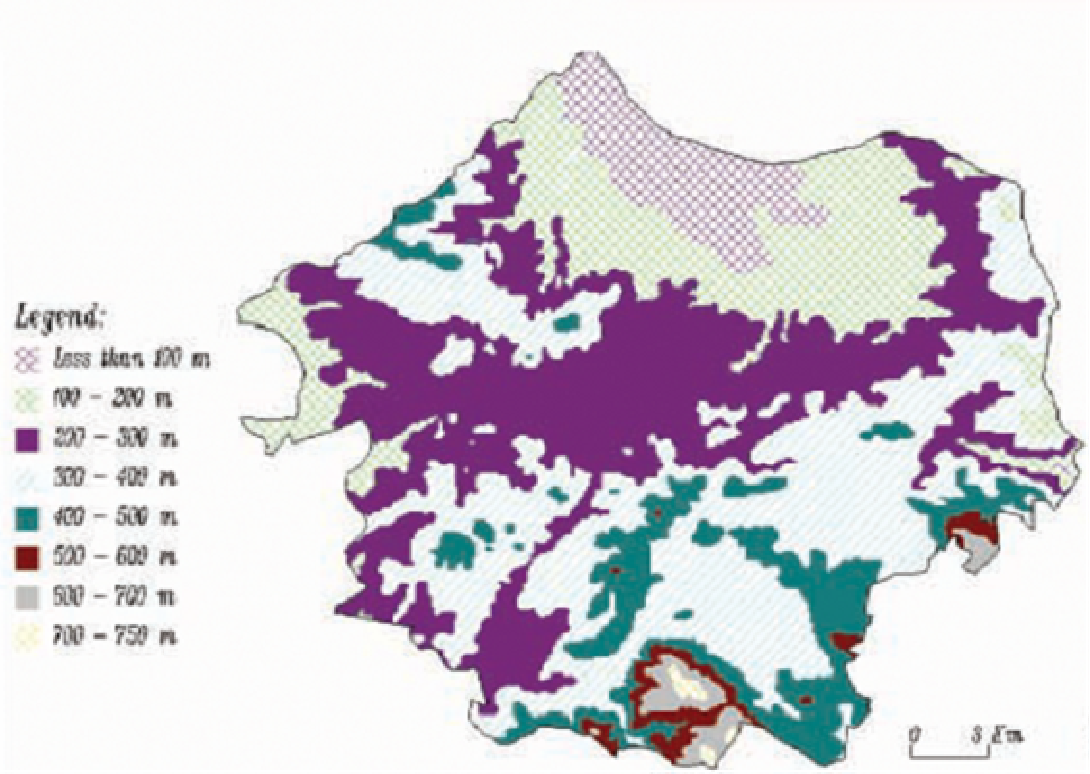
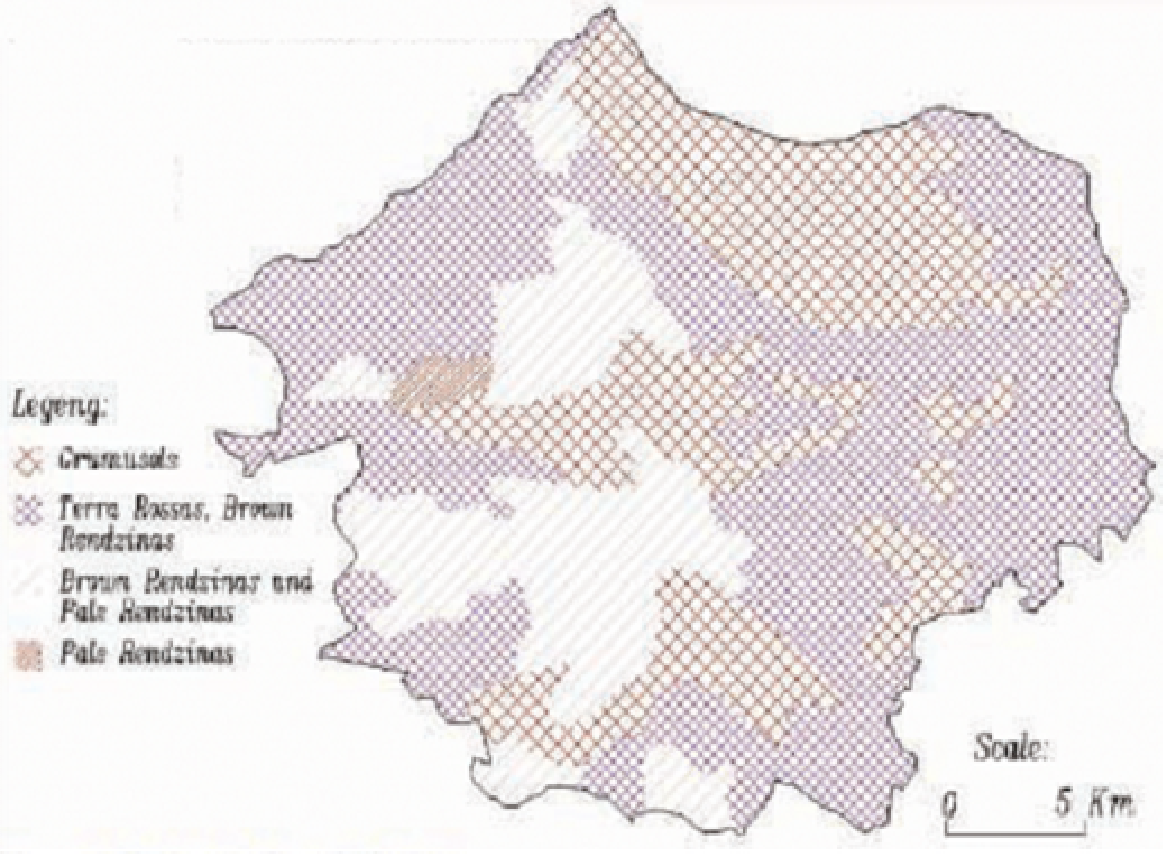


Figure 2.2.2: Soil Map of Jenin Region (ARIJ 1996)



However, some villages use up to 80% of their lands for cultivation; and an average of less than 0.5 hectare is used as built-up area. These figures are used to analyze the Early Bronze economy.

Figure 2.2.3: Land Use Map of Jenin region (Courtesy ARIJ 1996)

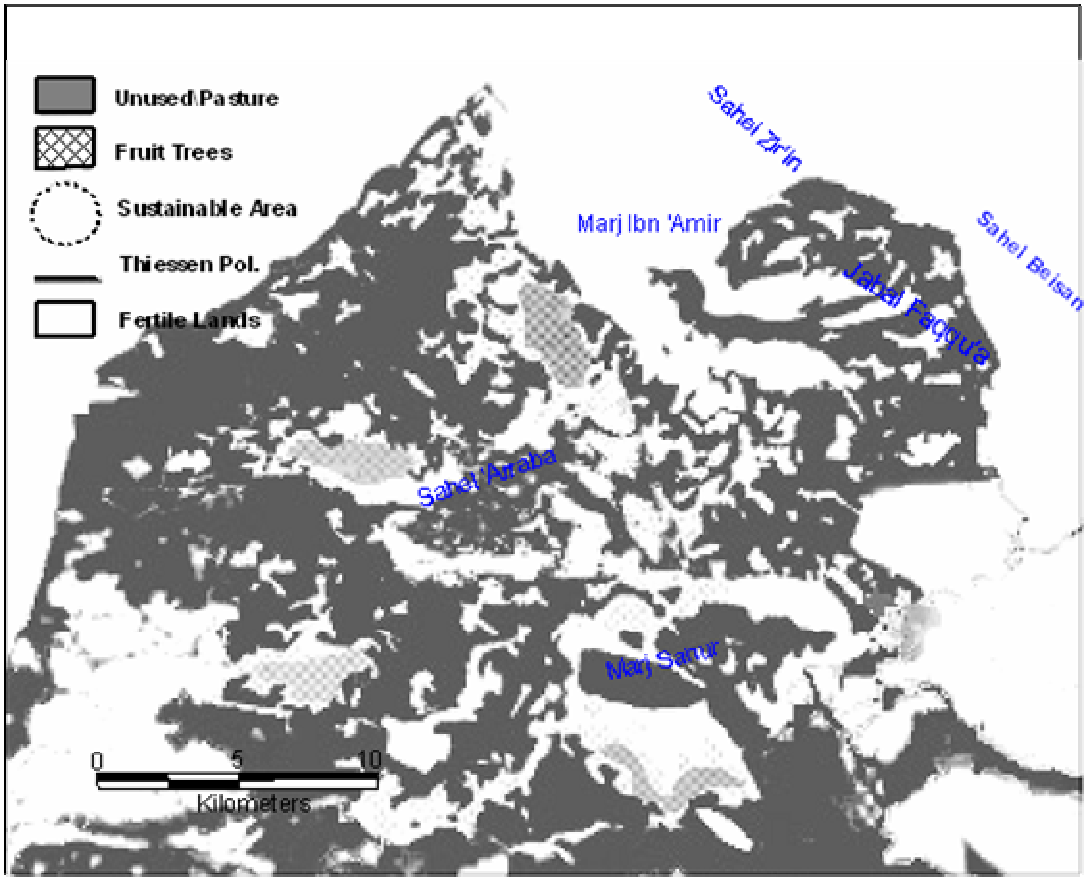


Figure 2.2.4: Aerial Photo of Jenin City Surrounding

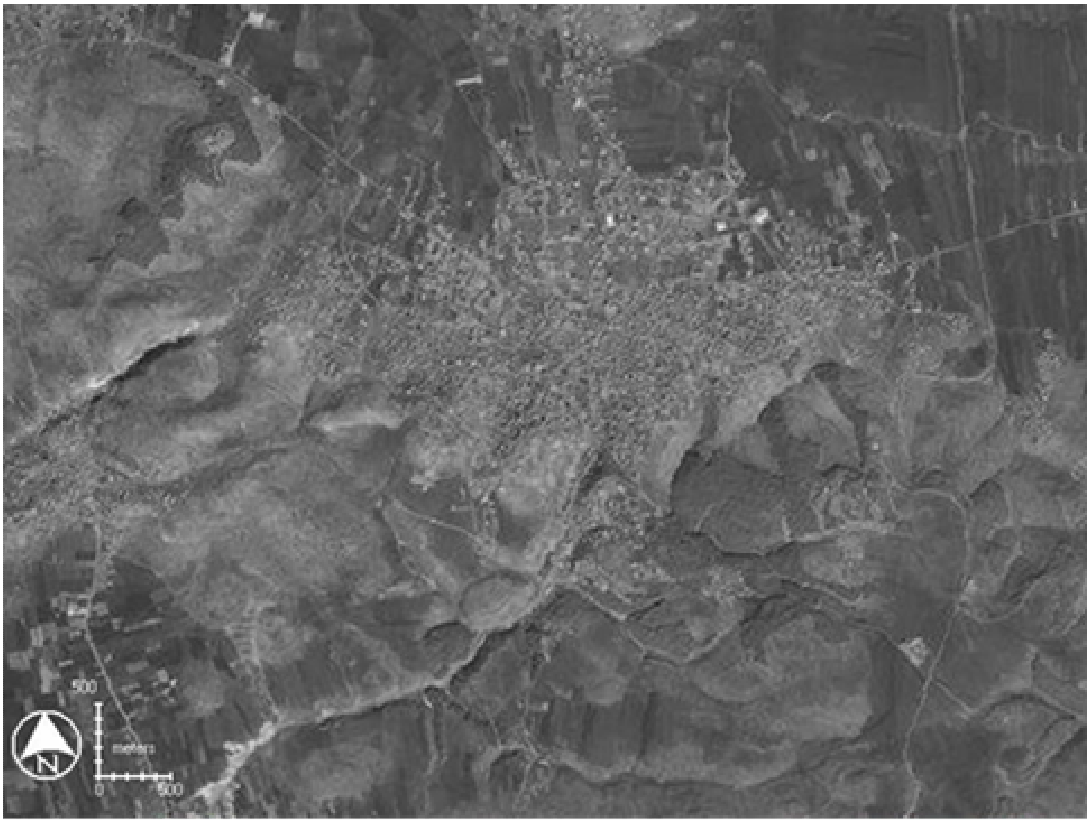


Table 1.1 also shows that the total catchment area of Jenin is about 828 km^2, or a radius of about 16 km. The average catchment radius for all villages is 2 km, with a range from 0.5 to 5 km.

The region hosted a population of 58,000 persons (with a coefficient of 204 per/ha). This area is more than twice larger than that suggested by Hassan in his definition of nomes territories. The area agrees with that suggested by Bintliff for settlement territorial control and network building with a 32 km diameter.

This area can be divided into six size categories (Table 1.2). The smallest settlement had a size of .2 ha while the largest, Jenin city, had a size of 110.5 ha. The small size settlements of 0.2 to 0.9 ha are represented by 31% of the village ha. They had a total area of 7,267 ha with an average radius of 1.4 km and a total population of 3,829 person (population density is high at 369 per/ha). However, though the total built area of these settlements is the smallest, it owned about 1,300 times of land. Assuming that half the land is cultivated, then each built-up hectare of small villages had about 650 ha for cultivation. Contrary to that, large settlements (viewed as urban centres) represent 8% of the settlements- the largest settlements of sizes ranging between 9.2 to 110.5 (Jenin city is 110.5 and next to it the largest is 31 ha). They had a total built-up area of 175 ha, more than all the other settlements together (61% of the total built-up area, and about 40% of the population). The urban centres had a very low population density. The ratio of the built-up area to the total area is about 122 times. So the ratio of built-up area to the cultivated land is 61 times. However each hectare needs to support three times the population size of the smaller villages. Accordingly, the small village had enough land resources to produce as much as three times their population need.

3.3.3 **The Model**

The data from the Jenin region will assist in creating a model to reconstruct the EBI economy and population trends. First, the best method for estimating the EBI population is by taking the average of all estimates. Then this coefficient is multiplied by the settlement size. Based on the recent history of the Jenin region, the population tends to fluctuate in a normal sense. For example the ratio of the refugees coming to Jenin after 1948 approximately equals the same ratio leaving the region. So, it can be assumed that the same population growth was maintained through time, not affected much by political constraints. A similar case may exist following the Chalcolithic period.

Second, measuring EBI economic sustainability is based on traditional land use economic coefficients. However, since only the built-up area can be estimated in the archaeological settlements, the settlement size can be used to estimate the economic sustainability and land use in the ancient times. Based on the traditional living, it was found that each hectare of built-up area needs about 293 ha of total lands and 150 ha for cultivation (sustainable area). So, the size of the ancient settlement can be multiplied by these coefficients to obtain the settlements land use.

In a similar way, the population's need can be estimated based on the economic production and consumption of the traditional villages. The average cereal production is 609 kg/hectare (In a "bad year economy", the production is lowered by 30%). Each hectare produces around 610 kg of wheat or 730 kg of barely. Also, each hectare supports 1.4 persons. The average annual individual production is 194 kg of cereals (wheat, barley, maize, etc.), while the average annual individual wheat production is 145 kg.

For example, the built-up area of Jenin town is 1,105 ha, with a total area of 1,877 ha (radius of 2.4 km). The population of Jenin city was around 4,000 persons. This will fall in the range proposed by Wilkinson of the carrying capacity of 5,850 persons in 5 km radius. Then, the 5 km radius living area of Jenin city will fall short in providing sufficient resources. But if we exclude Jenin city, we will find that the majority of the other villages do live in areas providing three times their needs.

In summary, the data presented in Tables 1.1

will be ideal, and falls in agreement with site catchment analysis models presented in Chapter 1, namely, of Wilkinson and Bintliff. However, one has to be cautious when applying these figures to the EBI economy because of the improvement of the cultivation techniques by introducing iron tools which improved the land productivity (Bintliff 2000). Therefore, the above figures had to be lowered down when applied to periods preceding the iron plow cultivation.

4 AN OVERVIEW OF SETTLEMENT PATTERN

4.1 THE NATURE OF THE DATA

4.1.1 **Review of the Archaeological Surveys**

Table 2.1 indicates that the Jenin region had more than 354 identified archaeological settlements. Only 78% of them were surveyed. Four major surveys were conducted in the region: The Survey of Western Palestine, the British Survey, the Israeli 1968 survey and the 1980s Zertal Survey. Other six small-scale surveys and studies include the records of Glock (1979b), Bagatti (1979) and Zori (1977). (Table 2.1 and Figure 2.3.1 and 2.3.2 summarize the results of these surveys by site.

In their attempt to draw the Map of Western Palestine, Conder and Kitchener (1881) surveyed 10,000 sites in Historical Palestine. The sites were not identified according to their periods.

Figure 2.3.1: Surveys per Site Coverage

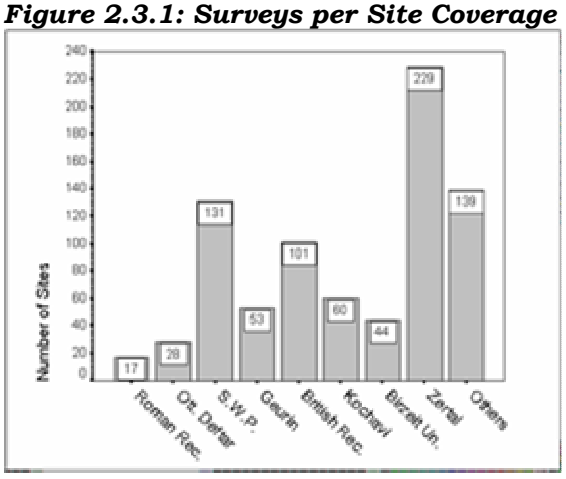


Table 2.1: Coverage of Surveys for settlements within Jenin Region

Survey	*Number*	*Percentage*
British	101	28.5
Guerin	53	15.0
Glock	28	7.9
Kochavi	60	16.9
OTHER	144	40.7
Ottoman Defter	44	12.4
S. of Western Palestine	131	37.0
Zertal	229	64.7

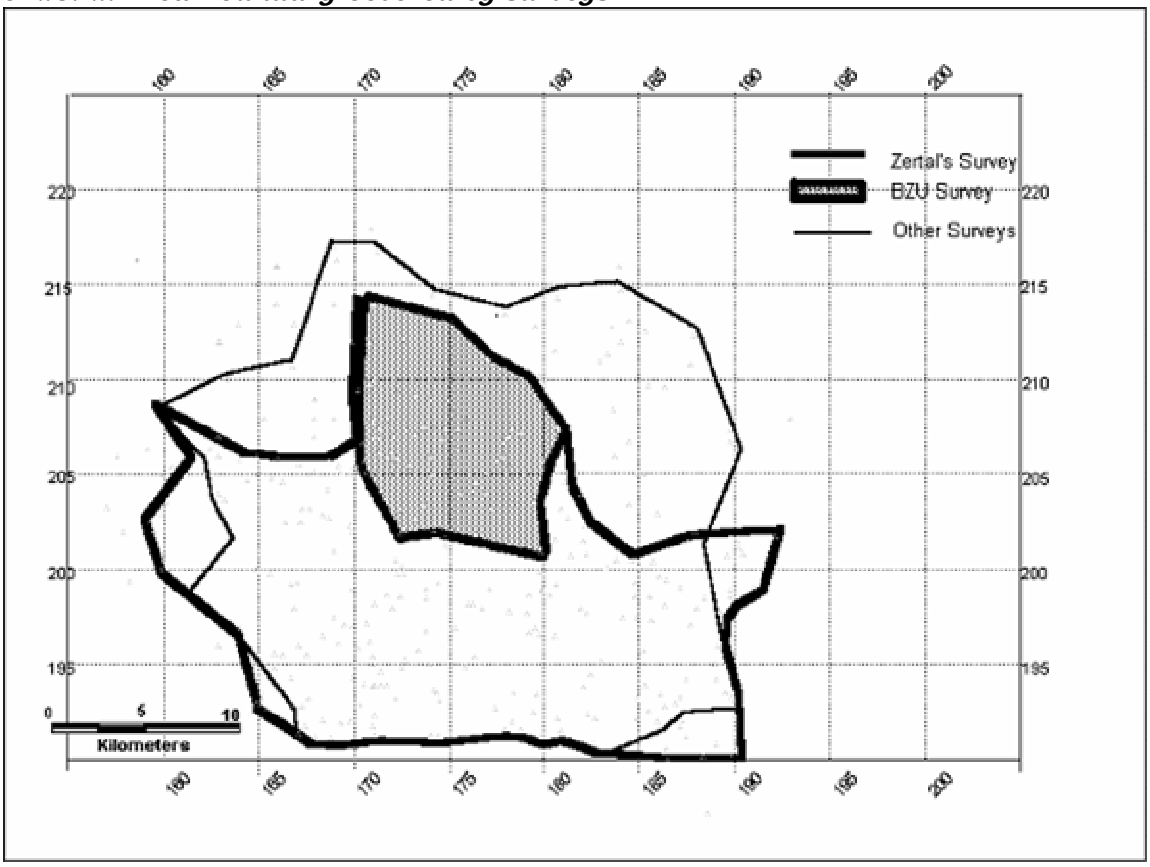
However, the contents were briefly described. Conder and Kitchener (1881) identified 131 sites (37% of the total). Fourteen sites were mentioned only in this survey and not in any other record.

The British list of archaeological sites was mainly based on the Survey of Western Palestine. A British list also described the sites that existed at the time. The official British records reported only 29% of the archaeological sites. All of them were mentioned by other surveys. However, the majority of the surveyed sites were marked on the Survey of Western Palestine map.

The Israeli Military authority conducted a survey in 1968. The result of this survey was published in a volume by the Israel Archaeological Survey (Kochavi 1972). Their survey covered only 60 sites (17%) of the known sites in the region. The British records reported forty of them. The poor techniques and the limited time given to the survey seem to have made the information of the region erroneous. The chronology based on the pottery readings of many sites contradicted the results of other surveys. Considering this survey alone, the most dominant period in the Jenin region is the Byzantine period. It forms 84% of the sites. Iron Age II is the second period important to the surveyors.

The Birzeit University archaeological surveys and excavations of the Jenin region were

Figure 2.3.2.: Area Boundary Covered by surveys



conducted under the direction of the late Professor Albert Glock with the objective of reconstructing and recording the cultural traditions of the region. Two limited surveys and seven excavation seasons took place between the years 1977 and 1984. The first survey was conducted in 1979 covering an area of 150 square kilometres around Tell Jenin (Glock 1979b). The objective of the survey was to identify the cultural traditions of Tell Jenin zone. It examined data from earlier surveys. Glock surveyed twenty-eight sites out of the fifty-eight archaeological sites within the boundary of the Tell Jenin "zone." Of these twenty-eight sites, the Survey of Western Palestine reported on 71%, the British Survey reported on 68% of the sites, and the 1968 Israeli survey covered only 54% of the sites. Earlier than that, both the Roman records and the Ottoman records reported 14% of the sites of the same area. Eight sites which fall within the limits were not included in this survey.

Table 2.2.: Frequency Of Occupational Periods per Sites Number

No. Periods	*Frequency*	*Percent*
1	76	30.9
2	46	18.7
3	21	8.5
4	22	8.9
5	15	6.1
6	21	8.5
7	11	4.5
8	14	5.7
9	6	2.4
10	7	2.8
11	3	1.2
12	2	.8
13	1	.4
15	1	.4
Total	246	100.0

The second Birzeit University survey was conducted in 1984 with the objective of identifying the environment and aceramic sites of the region. One result of this survey is the discovery of two aceramic sites.

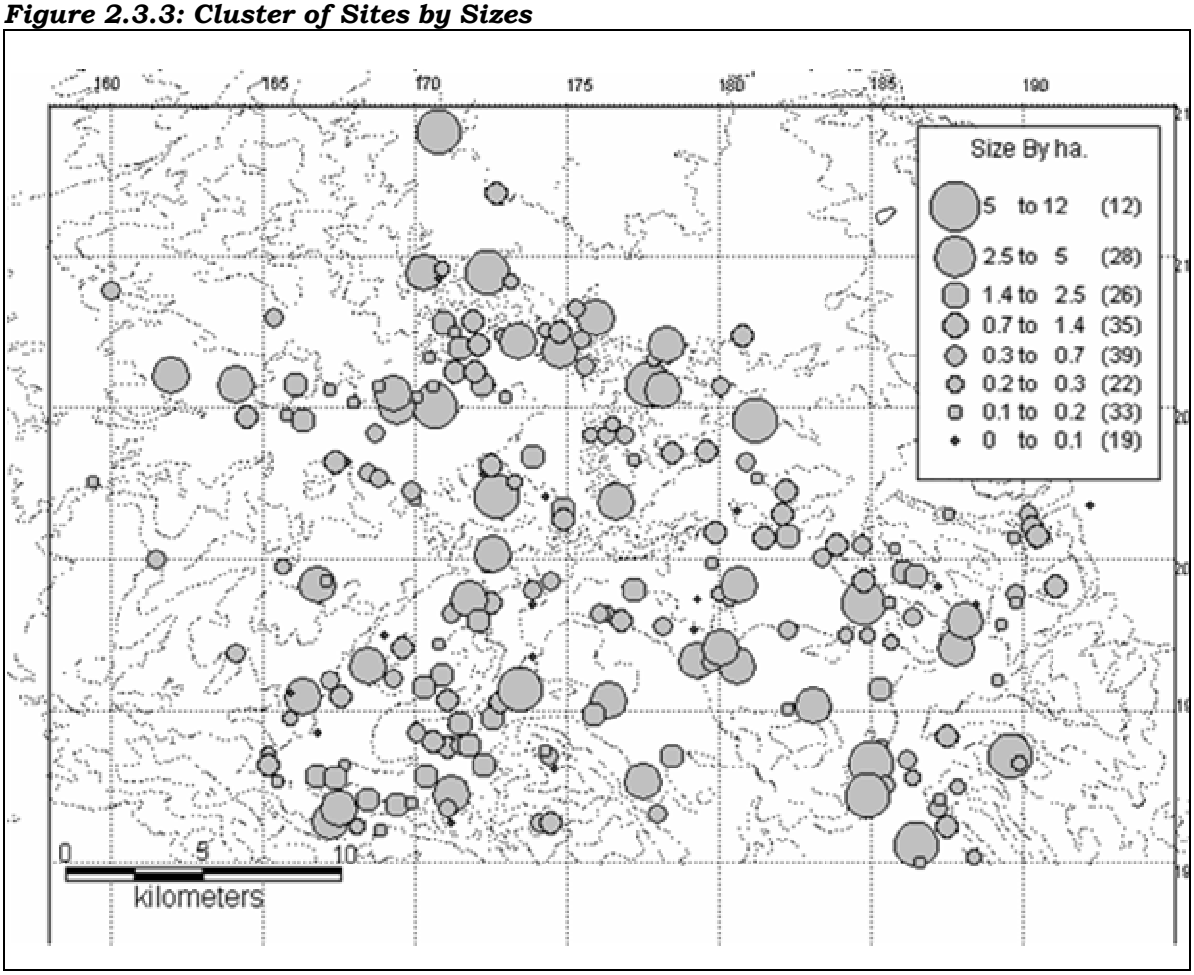
There are several items of notice from the results of the conducted surveys. The first item is the contradiction on dating the sites. Of the sixteen sites surveyed by both Kochavi and Glock, only one, Za'atara, shared a common result. Not all the other sites matched. For example, Glock showed that four sites (14%) only of those surveyed included remains of the Iron Age I period and, while the Kochavi survey showed that thirty-one sites (55%) had remains of the same period. A similar phenomenon can be observed when comparing the results of more than one survey done for a site. The second item is the various techniques used by surveyors. The poor techniques and the limited time given to early Israeli surveys seem to have made the information on the region erroneous. However, the techniques were improved by the survey of Zertal (1988, 1992, 1996, and 2000). Many small sites were included, in addition to data on size and periodization. This was one of the most intensive surveys of the region. The result of which was produced in four volumes that included 229 sites in the Jenin region. However, the survey covered only 65% of all the known sites from the region (see Table 2.1). Of this figure, 40% were new sites not known by any previous surveys. However, still missing is various information about the eastern side and the middle of the region (Figure 2.3.3).

Moreover, each site was described in some detail, including the percentage of pottery readings from each period. In this report, I used for statistical purposes data on location, pottery readings, size, and the elevation of sites above sea level. Some data were checked against excavations, like those of Tell Ta'annak and Tell Dothan.

4.1.2 **Notes on the Settlement Sizes**

Two problems are noted when dealing with the settlement sizes. The first is the problem of

Figure 2.3.3: Cluster of Sites by Sizes



estimating the occupational limits of the settlement. One problem may be related to the erosion of the settlement remains at the site edge and making it larger than the original occupational limits. Similarly, the second problem is that a settlement size may change during the occupational periods. Therefore, it is difficult to get the settlement size for a particular period, until all of it is excavated. Keeping these drawbacks in mind, the settlement size can be only estimated. Figure 2.3.3 was reproduced from a size estimate done by the published surveys. It shows the size dimensions for all settlements.

Two common clustering patterns are noticed. The first is that settlement clusters are concentrated around the Wadis and agricultural lands, especially of Wadi Arrabeh and Marj Ibn 'Amir. Other settlements were lined at the sides of the main roads through the valleys and low mountains. Sites, which are less than one hectare, clustered aside the road leading from Nablus to Jenin. They are located on higher elevations, exceeding 400 meters.

The second main pattern is a cluster of small settlements around one or two larger settlements. These small settlements of less than 0.1 hectare cluster to one another in a very close proximity. Each cluster is within a radius of about 3 km. It is likely that the function of the cluster is to protect the larger settlements. The locations of each cluster, of course, change through time. Nevertheless, it is likely that the general patterns were maintained.

4.1.3 **Notes on Site Location and Occupation**

Table 2.2 and Figures 2.3.4, 2.3.5 show that half of the settlements had only one or two periods. Few settlements had more than 10 periods. This is an indication of the changing locality of the settlements. It is one way to show that the people shift their settlements to a nearby site. However, the most intensified occupation is

Table 2.3: Frequency Table of Tell Jenin Showing the Development History of the Occupational Periods

Period	Sites		Abandon After			Only Occupied			Started		Continue Previous		
	No.	*% Total*	*No.*	*% Within*	*%*	*No.*	*%Within*	*% Total*	*No.*	*%*	*No.*	*% Within*	*% Total*
Chalco	20	8.1	13	65.0	5.3	13	65.0	15.5	20	8.1		0.0	% Total
EB1	24	9.8	1	4.2	0.4	1	4.2	1.2	19	7.7	21	87.5	8.5
EBII	28	11.4	5	17.9	2.0	1	3.6	1.2	11	4.5	16	57.1	6.5
MBI	15	6.1	3	20.0	1.2	3	20.0	3.6	12	4.9	3	20.0	1.2
MBII	76	30.9	18	23.7	7.3	15	19.7	17.9	51	20.7	10	13.2	4.1
LB1	13	5.3	2	15.4	0.8	0	0.0	0.0	0	0.0	12	92.3	4.9
LB2	17	6.9	2	11.8	0.8	1	5.9	1.2	2	0.8	8	47.1	3.3
IR1	71	28.9	8	11.3	3.3	6	8.5	7.1	26	10.6	13	18.3	5.3
Ir2	73	29.7	6	8.2	2.4	4	5.5	4.8	16	6.5	51	69.9	20.7
Per	99	40.2	31	31.3	12.6	6	6.1	7.1	24	9.8	58	58.6	23.6
Hel	54	22.0	5	9.3	2.0	1	1.9	1.2	4	1.6	47	87.0	19.1
Rom	72	29.3	5	6.9	2.0	1	1.4	1.2	15	6.1	40	55.6	16.3
Byz	119	48.4	41	34.5	16.7	11	9.2	13.1	25	10.2	66	55.5	26.8
Eis	62	25.2	7	11.3	2.8	3	4.8	3.6	3	1.2	59	95.2	24.0
LIS	72	29.3	22	30.6	8.9		0.0	0.0			53	73.6	21.5
OTO	47	19.1	21	44.7	8.5	18	38.3	21.4	18	7.3	46	97.9	18.7
Modern	56	22.8	56	100.0	22.8		0.0	0.0			26	46.4	10.6

Figure 2.3.4: Occupation Periods per Site

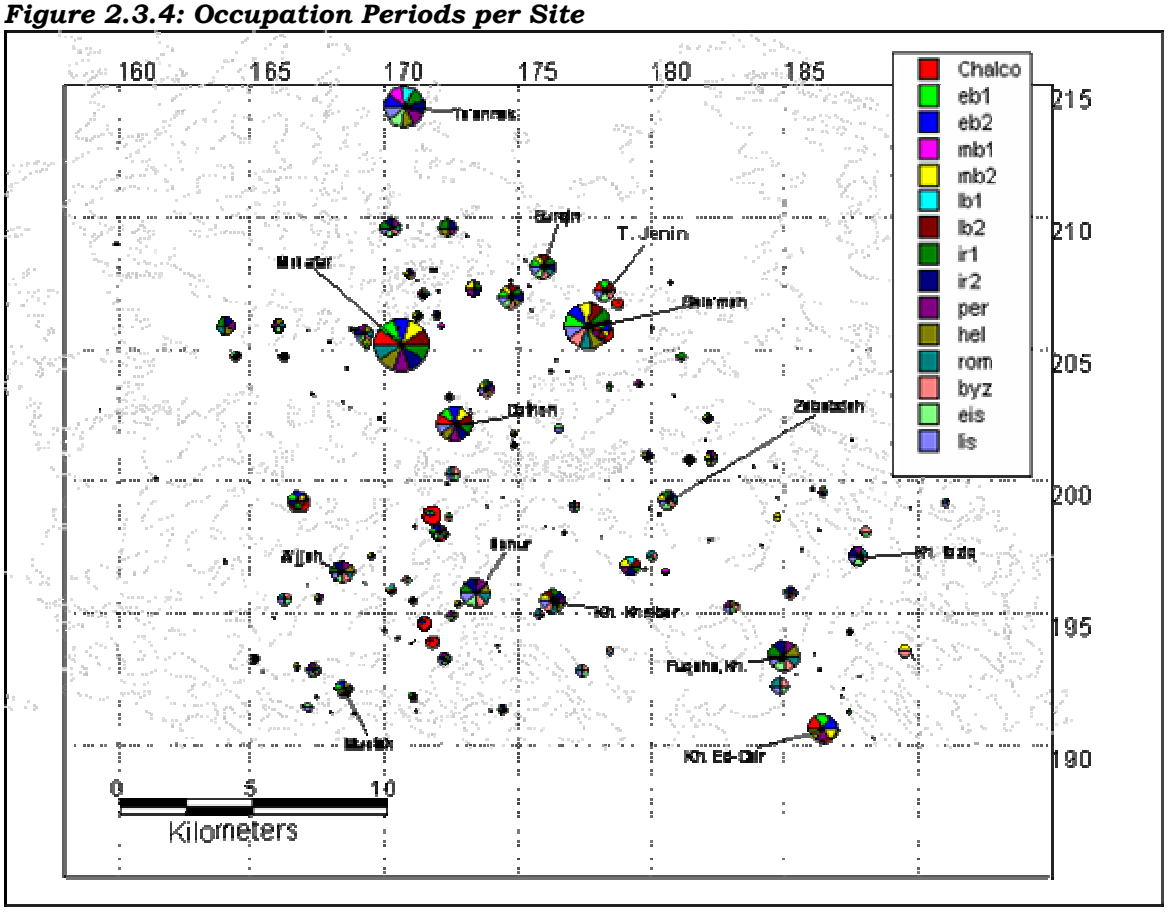
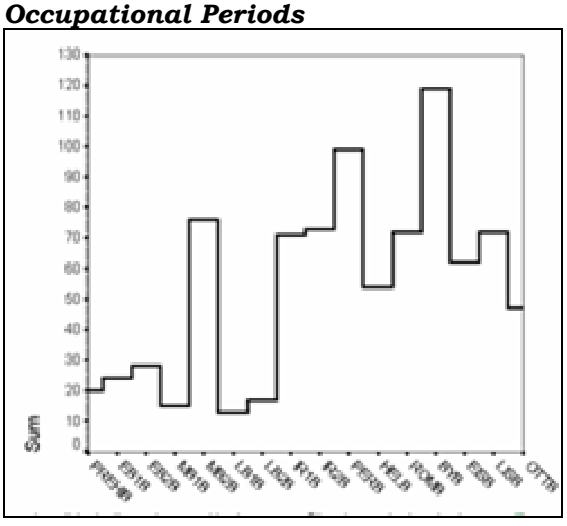


Figure 2.3.5: Chart of Site by Occupational Periods



clustered around Sahel Arrabeh and Marj Sanur. Many settlements in these two wadis were occupied for an extended longer periods. Sites with smaller density are found more to the east in Jabal Faqu'a area.

Figure 2.3.4 then shows that settlements with multi-period occupation concentrate around the plain of Arrabeh, where also modern history had proved it to be a significant place. They had been continuously occupied for several periods (some until today). Examples of these settlements are Kh. Bal'ama and Tell el-Muhaffer that were occupied during about 13 periods. The most dominant occupation was during the Byzantine period, where the highest occupational peak was noticed, followed by the Persian period (Figure 2.3.5). The least occupation was during the EBI.

The following is an analysis of the occupational periods of the Jenin region, focusing on the issue of continuity and change.

4.2 THE PROGRESS OF THE SETTLEMENT SYSTEM

4.2.1 **Prehistory (Chalcolithic) of Tell Jenin Region**

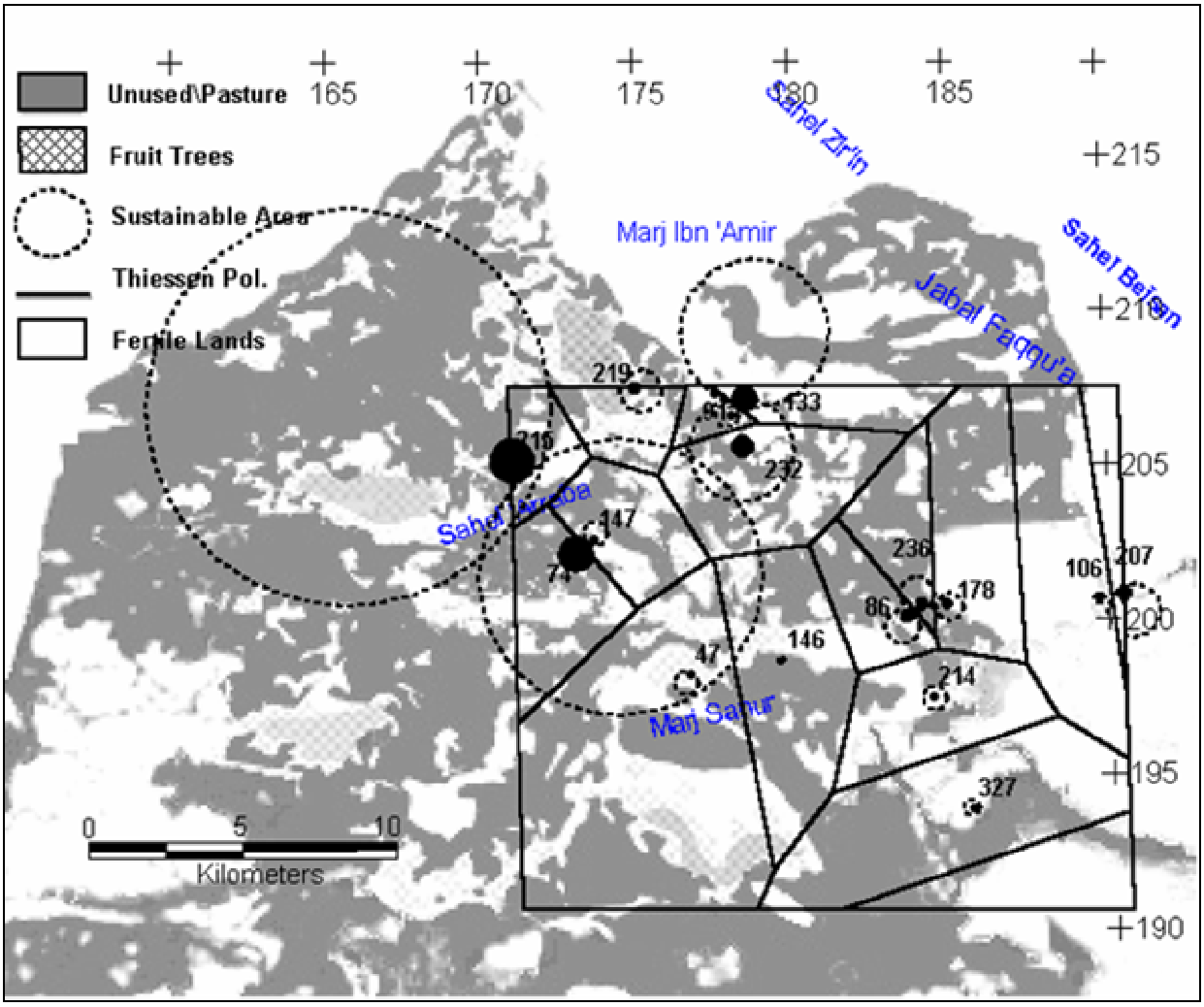
Chalcolithic remains are found in 20 settlements (8.1% of all The Jenin region settlements). The majority of the settlements

were occupied only in this period and were abandoned later on (Table 2.3). This is one of the rare cases in settlements occupational history in the region. Conversely, occupation continuity within one kilometre radius around these settlements is noticed.

The total built-up area for all settlements is about 31.4 ha, with an estimated population of 7,462 persons. The average village size is 2 ha. The twenty settlements needed a total area of about 14,826 ha, and sustaining area of 7,538 ha. The Thiessen polygon territorial division allocated an area of about 33,238 ha (Figure 2.4.1). Assuming 50% of the total area was cultivated, and then 16,619 ha were available for agriculture. The population may need an estimated sustainable area of 3,731 ha (based on 200 kg individual consumption and 400 kg/ year of one hectare production). Therefore, Thiessen polygons and an estimate based on Jenin region need suggest that the Chalcolithic period may have had a land capacity for producing 50% to 75% surplus. Plenty of pasturelands were also available for these communities.

The general settlement pattern in this area indicates that the Chalcolithic settlements are located on the eastern mountains (Jabal Faqqu'a). No settlements were reported in the western mountains. The Thiessen polygon territory division indicates that settlement territories are divided between the grasslands and fertile lands. Archaeologists proposed that several economic patterns were practiced in this period (Finkelstein and Perevolotsky 1990, Levy 1993). The Chalcolithic economy of the Jenin region combines a pastoral-agricultural system and farming. As a result, three settlement systems can be distinguished (Figure 2.4.2).

Figure 2.4.1: Map of the Chalcolithic Settlements Showing Thiessen Polygon and Sustainable Territories



Settlement System A

This system exemplifies a cluster of small settlements dispersed on the mountains, controlling a small area of cultivated land but with large areas of pastureland (see #214, #146, #47, #327). This settlement system was associated with small pastoral and agrico-pastoral communities composed of 2 to 10 families. None of these settlements continued on the same spots. Later settlement continuity within one kilometre radius was not recorded before the Middle Bronze Age (See Figure 2.3.4). It is more likely then that the pastoral economy was less significant during the succeeding EBI period.

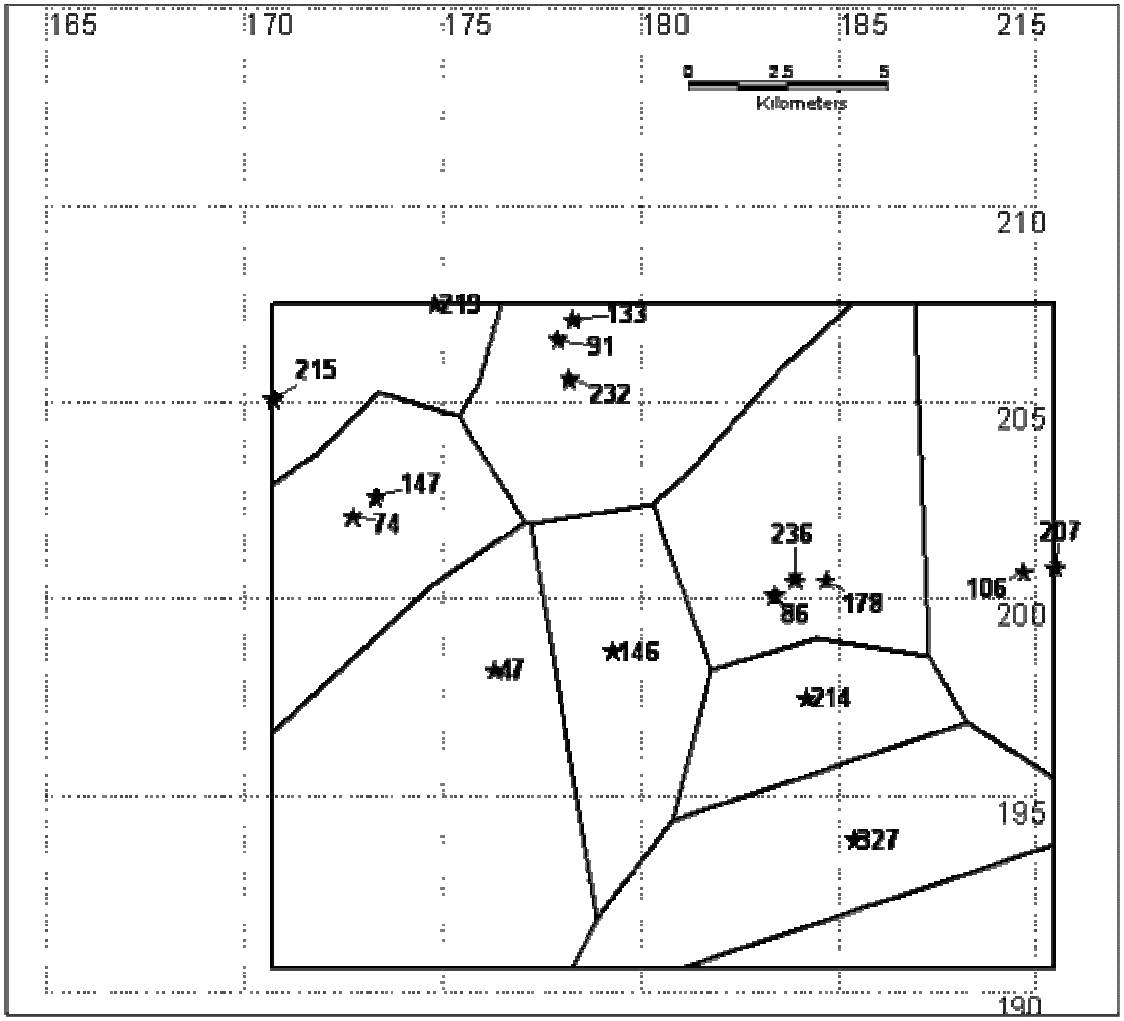
This could suggest an offspring of very small settlements based on small populations agreeing with Bintliff's model. It also suggests a mode of production based on a small-scale family business, as that suggested by Sahlins. The cluster points to three settlement systems. The small villages have a population of around 10 persons belonging to a single family

On the other hand, it is difficult to view these communities as connected to a general system. They were more likely very small communities based on family connections. This may resemble the case of the modern life style practiced today in the Jenin region.

Settlement System B

The second Chalcolithic settlement system is formed by a cluster of small settlements within 1.5 km radius around fertile lands and plentiful water resources. Two clusters are found. The first is located at the eastern fringes (#86 and #178 and #236). The largest settlement of about

Figure 2.4.2: Map of the Chalcolithic States (Thiessen Polygon)



0.7 ha is en-Napa (#236); the others are small settlements with few remains. The second one is located at the northern mouth of Wadi Bal'ama (#133, #91 and #232) (Figure 2.4.1). The total population ranges from 500 to 1,500 persons. The area needed for each cluster falls between 300 and 800 ha. The actual population need of land falls between 250 and 900 ha. So, the area allocated for these settlements will feed double its inhabitants. They are located in two areas. The first is the Tell Jenin zone; the second is Sahel Arrabeh zone.

Settlement System C

The third settlement system is composed of a large nucleated settlement and a smaller one within one kilometre distance. Settlement #207 had scattered buildings and #106 is a small settlement with few building remains. Both settlements may have an estimated territory of 4,283 ha sustaining a population of about 550 persons (250-300) (see Figure 2.4.3). The actual need for such a population is about 275 ha of cultivated land (based on 200 kg individual consumption and 400 kg/year hectare production).

The settlements overlook the Beisan valley. They were occupied only during the Chalcolithic period. Perhaps the harsh climate was one reason for their abandonment. This side of The Jenin region remained unoccupied until the Middle Bronze Age.

Another similar system can be observed toward the east side of the Arrabeh valley. Tell Dothan (#74) is a large multi-period settlement that started during the Chalcolithic period (see below). Another settlement was built toward the east side (#147) at the edge of the valley. The settlement did not continue through the EB periods, but a new settlement (# 255) replaced its territory with a similar view and function. The two settlements together had a population of around 1,500 persons. They need about 774 ha of cultivated land. Both the Thiessen polygon and cultivation estimate gave 51% of surplus land, if both settlements cultivated all their allocated fertile land.

A third nucleated settlement is found in Tell el Muhaffer. This was a large settlement with population coming to 2,500 persons, which had an area of 3,072 ha, and needed an area of 1,582 ha. This settlement stood alone. No other settlement was found in the vicinity. Since this period and on, both el Muhaffer and Dothan shared the Wadi Arrabeh lands. They continued to be occupied during the following periods. Actually, the EBI settlement system developed out of this as will be shown below.

4.2.1.1 THE EARLY BRONZE AGE I

Twenty-four settlements had EBI occupation. The majority of settlements started in new locations (Table 2.3). Only 21% of the settlements continue from the Chalcolithic period. These are mainly located in the area around Tell Jenin. This lowest continuity among all transitional periods may confirm that the Chalcolithic settlement system was not adopted during the later period.

Moreover, only one settlement was abandoned during the later periods. This is also the lowest abandonment ratio among all the other periods, suggesting that the EBI settlement location remains one of the favourite living spots throughout the settlement history of the region.

The total population of EBI Jenin region can be estimated to about 12,103 persons (8 persons for the smallest settlement and 2,800 persons for the largest one). The built-up area is 51.2 ha (smallest settlement is 0.01 ha and largest being 12 ha, see Figure 2.4.3). The average village size is slightly higher than the previous periods (2.2). Nevertheless, the built-up area size increased in a ratio similar to the population increase. This area needs about 12,298 ha of agricultural land. Thiessen polygon analysis suggests an area of 22,446 ha. Using the standard Chalcolithic coefficient for population need, an area of 5,812 ha may be needed for the Jenin population. Thus, the Tell Jenin allocated area may sustain up to 53% of the lands, which is slightly less than the Chalcolithic period.

EBI settlements shifted toward the west. No

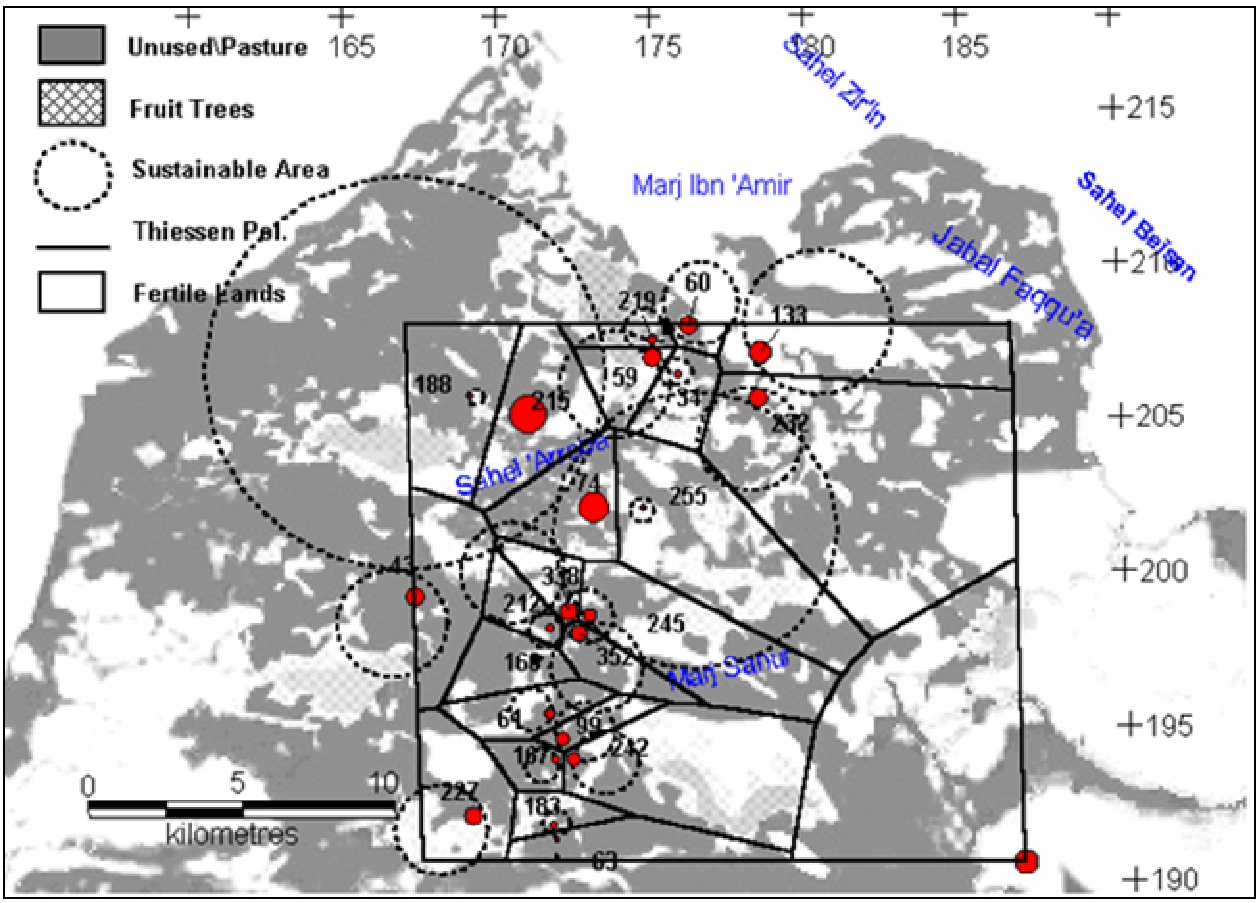
settlement was recorded at the Jabal Faqqu'a area. It may be the case that little pastoral economy was practiced during the EBI period.

The settlements concentrated mainly around the wadis and low mountains leading to Nablus (Figure 2.4.4). The main orientation is along the modern road leading south to Nablus. It is likely that these settlements were situated close to a road connecting the settlement systems with each others, which continues in use until today. The road may connect the Jenin region with a larger centre like Tell el Fara'a. This latter road is parallel to the via Maris, which passed Megiddo. However, it is unlikely that this road had any significance for establishing the settlement system of the period. The fertile lands and plentiful water resources in the region are the major forces. Figures 2.4.3 and 2.4.4 show that more than one settlement system was adopted for the Jenin region.

Settlement Systems

Settlement System A of the Chalcolithic period did not continue through the EBI. But, settlement system B developed to a more complicated one by expanding the settlement territorial control and alliance. The Thiessen polygons used to divide the settlement territory combined by 5 km radius suggest a system formed by a cluster of small settlements located within a 5 km radius of a large nucleated settlement. The Thiessen polygon agrees with the natural topographic divisions and land distribution between each system (Figure 2.4.3). In addition, the Thiessen polygon divided the wadi Arrabeh between the two settlement systems, making it a boundary line. This will fit with the natural divisions and topographic limits. From the northern boundary the territory between Dothan and Muhaffer overlapped if using the 5 km radius (Figure 2.4.2). The common pattern of

Figure 2.4.3: Map of Early Bronze Age I Settlements Showing Thiessen Polygon and Sustainable Territories



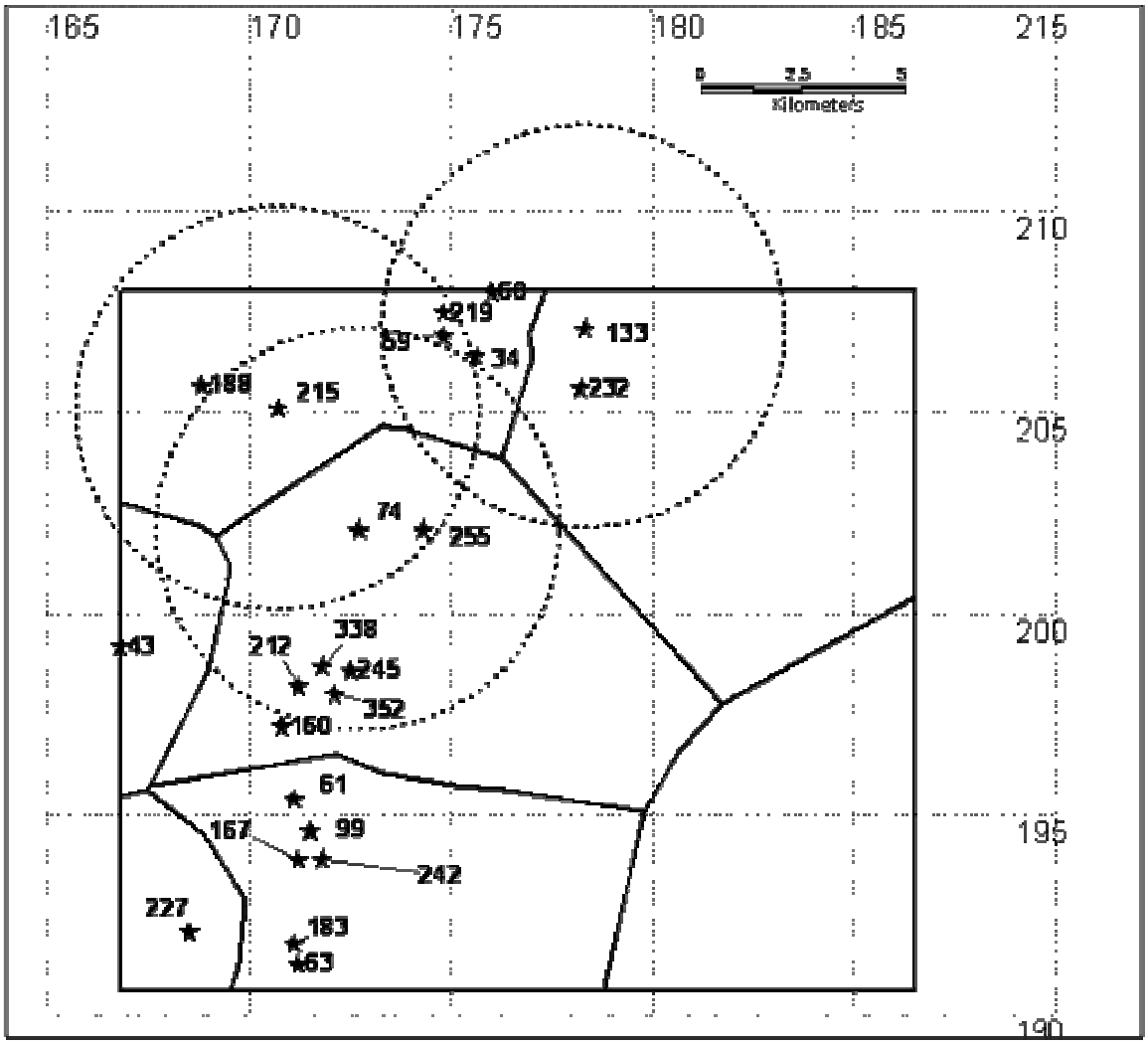
this system is as follows:

A large settlement contains a population ranging between 2,000 and 2,800 persons (about 400 households), as Dothan (#74), Tell el Muhaffer (#215), and el Majur (#183). Within one kilometre distance is a small settlement (#188, #255, and #63) which is located above the valleys. Their small size will not support a large agricultural community to feed the nearby settlement. It is more likely that they were satellite settlements to supervise the lands surrounding them; or at one point of time they split from the larger one due to insufficient resources.

A cluster is formed by four to five medium size settlements of about 150 households, and other smaller ones of 1 to 6 households. They are clustered within a one kilometre radius and situated about 5 km from the main centre. The three major clusters are: (#61, #242, #99, #167); (#212, #338, #245, #352, #160); (#219, #60, #59, #34). Each cluster is composed of two large villages, satellite fortified towers (#38, #63) and a small settlement next to a well (# 61, #160).

Such a functional division suggests that an organized network was adopted. Survey data indicates that small settlements may serve as fortified satellites or citadels. They are located within a visual distance supervising the wadi pathways and agricultural lands. Other small settlements are located near a spring. Springs may indicate the use of an irrigation system. Also, springs are used to provide water for human and animals. However, the economic need is a major factor in establishing such a

Figure 2.4.4: Map of the Early Bronze Age I States (Thiessen Polygon)



system.

The Tell el Muhaffer network had a total population of 4,822 persons, which needs a total productive land of 4,932 ha. The Thiessen polygon allocates only 2,411 ha. Therefore, the area falls short of sustaining itself. It needs around 5% more than its production. Among the three suggested systems, this was the lowest in productivity and remained so until later on. It must have lived on other economic resources. We know from ethnography that the current village of Y'abad in the vicinity lives from pottery production and charcoal manufacturing. However, agriculture is still the dominant economy. None of the sites is excavated to give a detailed picture of its economy. But, it is likely that timbering was also practiced in ancient times as a substitute economy to agriculture. An economic crisis may be a reason why this system gave territory during the EBII to other newly established settlements, such as Kh. Bal'ama (see below).

In contrast, the Tell Dothan settlement system had a total population of 3,059 persons, total lands of 6,100 ha and cultivated land of 4,932 ha. The Thiessen polygon allocated a land use of 4,169 ha. This system sustained itself more than the northern areas. It maintained the same territory through the next period. The alliance between its settlements may lead to an economic prosperity.

To the south of Dothan another settlement system was formed. No large settlement was found in this zone. However, the nearby settlements #183 and #63 have a similar pattern to the northern settlements of (#215, #188), (#74, #255). Site #183 (el Majur) is a small size settlement with multi period occupation. No building was found during the survey (Zertal 1992). It has not, however, the same size as of the northern settlements. But its location toward the direction of el Fara'a and within its state boundary will suggest that it followed the same settlement system. Site #63 is located at a high mountain supervising the wadi pathways. These two settlements fall within the boundary of 5 km radius of other small settlement clusters (#99, #61, #242, and #167).

The total population of this settlement system is about 1,171 persons. They need an area of 1,169 ha, while the estimated area was 6,670 ha. Thus there are enough resources to sustain this population.

A third unique settlement system is found in the Tell Jenin Zone. Jenin is located near another contemporary settlement of Kh. en-Najjar. Together with Jenin they may have formed a very successful sustainable economy. Each settlement had a population amounting to about 1,750 persons. Both settlements need an area of 1,169 ha. The Thiessen polygon allocated about 3,998 ha of lands, mainly toward the western grasslands. Like the present, the population must have used the Marj Ibn 'Amir and the mountain plateaus for cultivation needs. Kh. Najjar controls the fertile lands of the mountain plateau. It showed evidence of fortification. The settlement is opposite to Kh. Bal'ama. Unlike Tell Jenin, it was not abandoned after the EBI.

Similarly, Tell Jenin used the lower lands of Marj Ibn 'Amir. This area was subject to flooding during rainy seasons. In times of crisis, the settlement may not have sustained itself and so it had to rely on an alliance with neighbouring settlements. Perhaps this is one reason for the abandonment of the current location of Tell Jenin.

The three proposed systems show the capability of producing enough resources to sustain double their inhabitants. The settlement systems of Tell Jenin agree with the models proposed above by Wilkinson and particularly Bintliff of small state system development. It will agree with the principle that small systems are developed to run the economic resources in a more efficient way. A larger "village" serves as an intermediate place between the state centre and surrounding villages. We know from ethnographic resources that large markets are organized on a weekly basis in large cities. Settlements like Dothan and Muhaffer may served the same purpose, but as intermediate centres for a larger network (as for Megiddo and

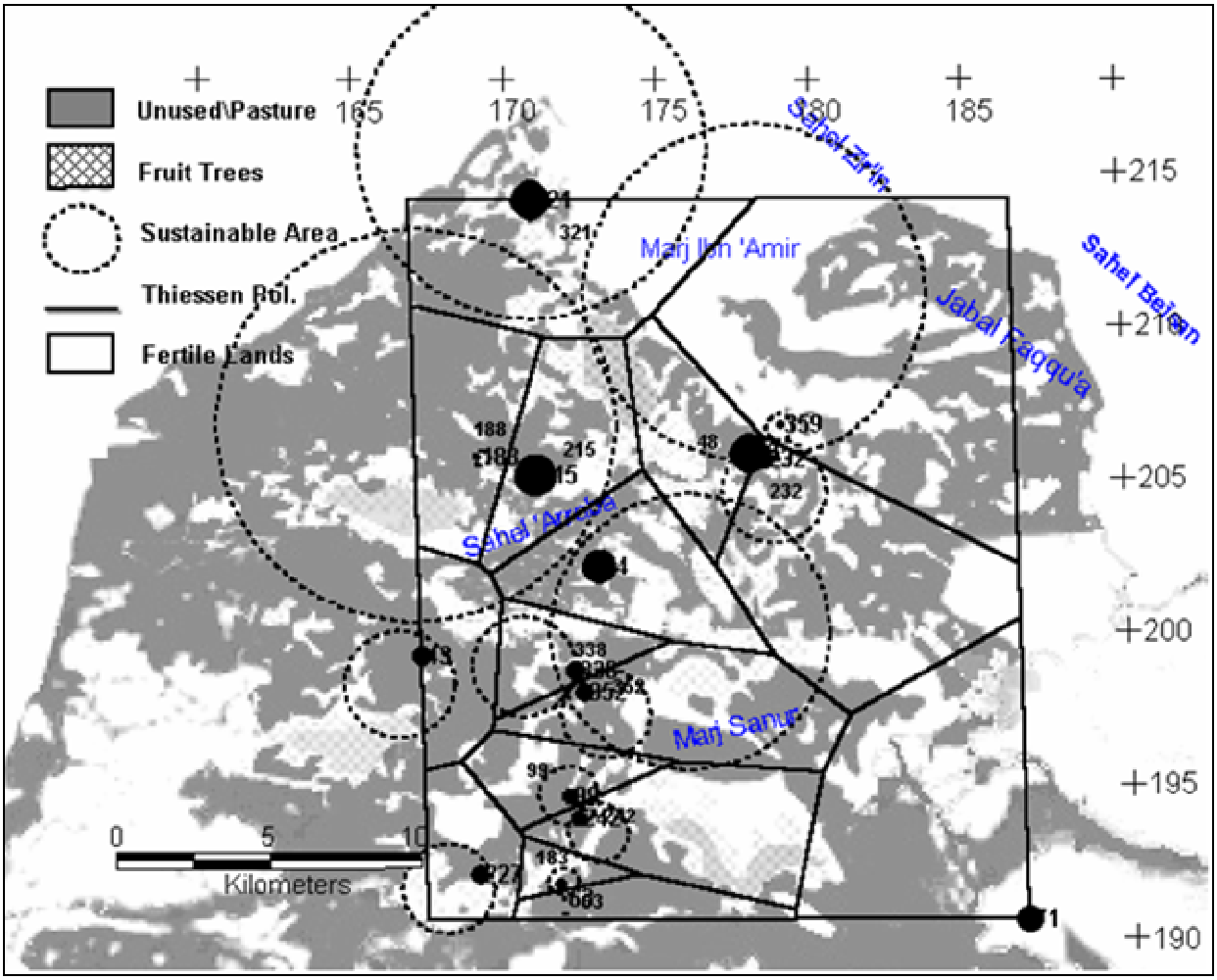
Fara'a). This issue will be pursued in the final section of this chapter.

The distance between each settlement system is about 5 to 10 km. With this area, it must have formed a general exchange network, connected to a more general network. We know by excavations that Tell Dothan and Jenin are major settlements of this period. South of Jenin is Tell Dothan, which was a fortified city, dated to the EBI period. East of Tell Jenin is Tell el-Husn (Beth Shan), which is also a large settlement with extensive remains dated to the EBI period. The closest settlement on the West is Tell el Mutassalim (Megiddo), a large city dated to the period. The space between each settlement and Tell Jenin encompasses a radius of 16 km. These data suggest a form of territoriality, where each one of these settlements formed a centre of a network of small agricultural villages. It was the basis upon which urbanism developed.

4.2.1.2 THE EBII-III PERIODS

The EBII-III remains were found in 28 settlements (11.4%). More than half of them (57%) continued from the previous period. Only 11 settlements (38%) were established on new localities (Table 1.2). The new settlements are located in the southern line of Marj Ibn 'Amir along the road to Haifa. One settlement was occupied during this period only. About 18% of these settlements were abandoned later on. Many settlements in the Tell Jenin zone were abandoned and instead new locations were established, particularly at Karem Jenin and Kh. Bal'ama. Not all the new locations were urban centres. Some of them were of a small size. Most likely, they were villages serving a larger centre.

Figure 2.4.5: Map of the Early Bronze Age II Settlements Showing Thiessen Polygon and Sustainable Territories



The EB II-III settlements continue the Early Bonze Age I settlement pattern (Figure 2.4.5).

The population estimate for the Jenin region is 13,762 inhabitants, which is of a similar size to the previous period. The smallest settlement has about 30 inhabitants; the next one has 125 inhabitants; the largest settlement has about 2,800 persons. The total built-up area is 60.2 ha. The smallest settlement is 0.1 hectare and the largest one is 12 ha. The population needs about 14,458 ha of agricultural land (The Thiessen polygons estimated 23,297 ha as use land). The estimated population need is 6,881 ha. So, the EBII had 52% of extra lands to support itself.

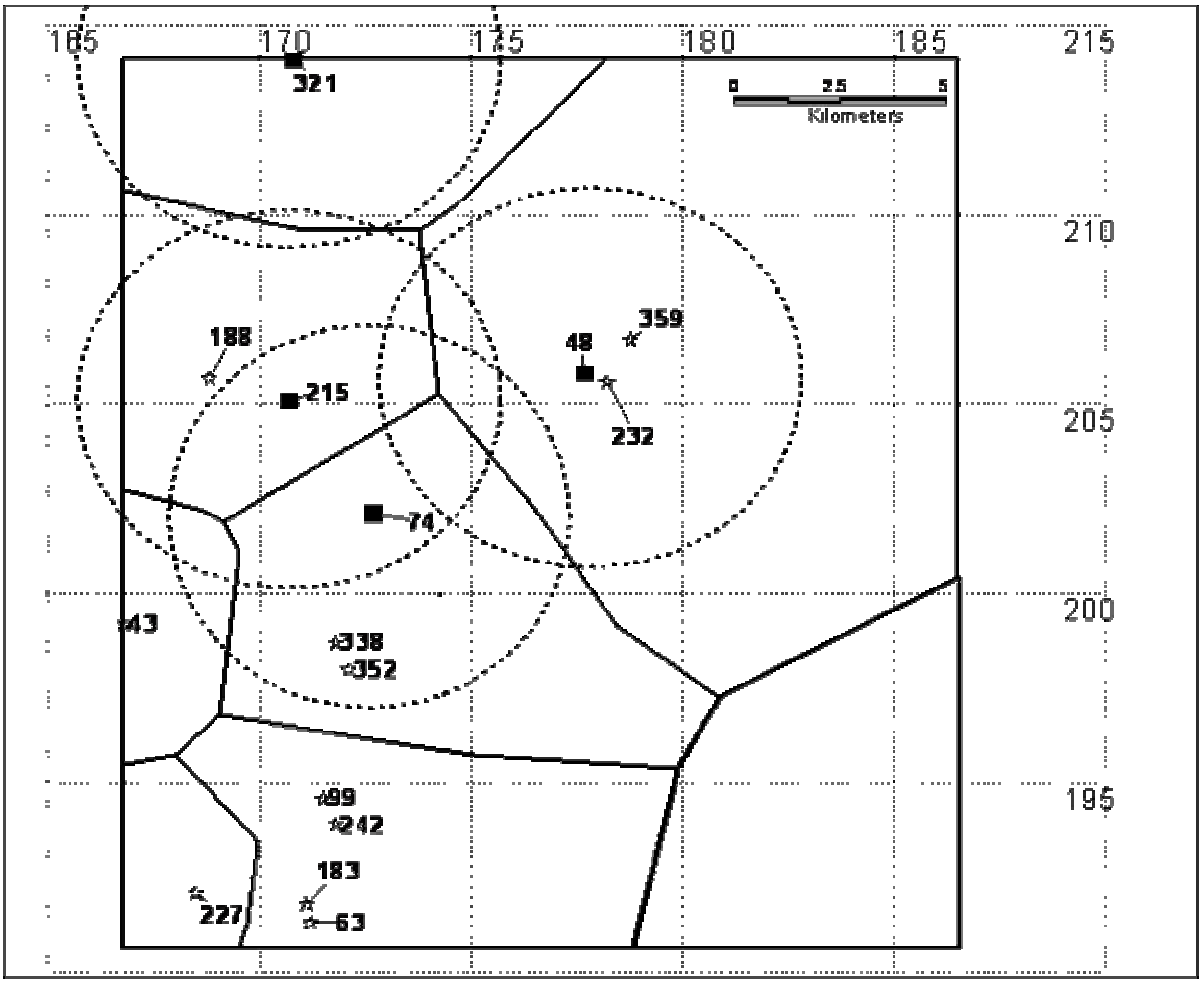
It is not clear whether the EBII population did adopt a new settlement system or continue the previous one. However, it is clear that the same settlement location was preferred. One development could be seen in Jenin zone area. Here a new settlement emerged, Kh. Bal'ama, and several other settlements disappeared from the map (#34, #59, #219, #60 and #133). Another small settlement, Karem Jenin, appeared in the Tell Jenin zone. The dynamic nature of the Tell Jenin Zone is highlighted.

Settlement Systems

Another new large settlement that appeared at this period is Tell Ta'annak.

The EBII settlement systems emerged out of Settlement Systems B and C with some modifications. There is a general tendency towards abandoning small settlements of less than one hectare in the core EBI zones. Large size settlements continue. Tell Dothan and Tell el Muhaffer continue as major centres (Figure 2.4.6), but some small size settlements in their vicinity disappeared from the map (#245, #160, #212, #255, #29, #59, #34, #60). Others of larger

Figure 2.4.6: Map of the Early Bronze Age II States (Thiessen Polygon)



size continue (#338 and #352). In this case, small size settlements may give their territory to neighbouring settlements (See Figure 2.4.5 and 2.4.6). The settlement systems of Tell Dothan and Tell el Muhaffer had less territory than before, though maintaining the same land use.

The Tell Dothan system had three settlements only. Thiessen polygon estimated a land use of around 3,503 ha for an estimated population of 2,575 persons. The settlement territory decreased about 15% from that of the previous period. Probably, this system lost territory to the new established settlement of Kh. Bal'ama.

More dramatically, the Tell el Muhaffer system gave half of its territory to the new settlements of Bal'ama and Ta'annak, and retained the old system of Settlement C Type (Nucleus settlement system). The area population decreased about 40%.

The Tell Jenin zone was a perfect place to give impetus to establishing new settlements as centres of power. Karem Jenin is a small settlement which was established as a new locality during the EBII, and occupied only during this period. This is a time when Tell Jenin was abandoned. Kh. Bal'ama is a large settlement which appeared in this period. It may have had fortifications. So, the data suggest a population shift from Tell Jenin to both these settlements, perhaps in two population movements. The first is a primary movement establishing the new small settlement of Karem Jenin located less than one kilometre from Tell Jenin. It may have been a result of population increase of Tell Jenin. The second movement lead to the establishment of Kh. Bal'ama. It is a result perhaps of flooding where the Tell Jenin inhabitants abandoned the site in favour of a higher location such as Bal'ama. It should be noticed that Jenin zone (within one kilometre radius) remained one of the favourite locations.

The total population of the Kh. Bal'ama settlement system is about 3,000 persons. The land use area is about 2,500 ha. This system was self-dependent and in the same time may have produced more than 50% surplus.

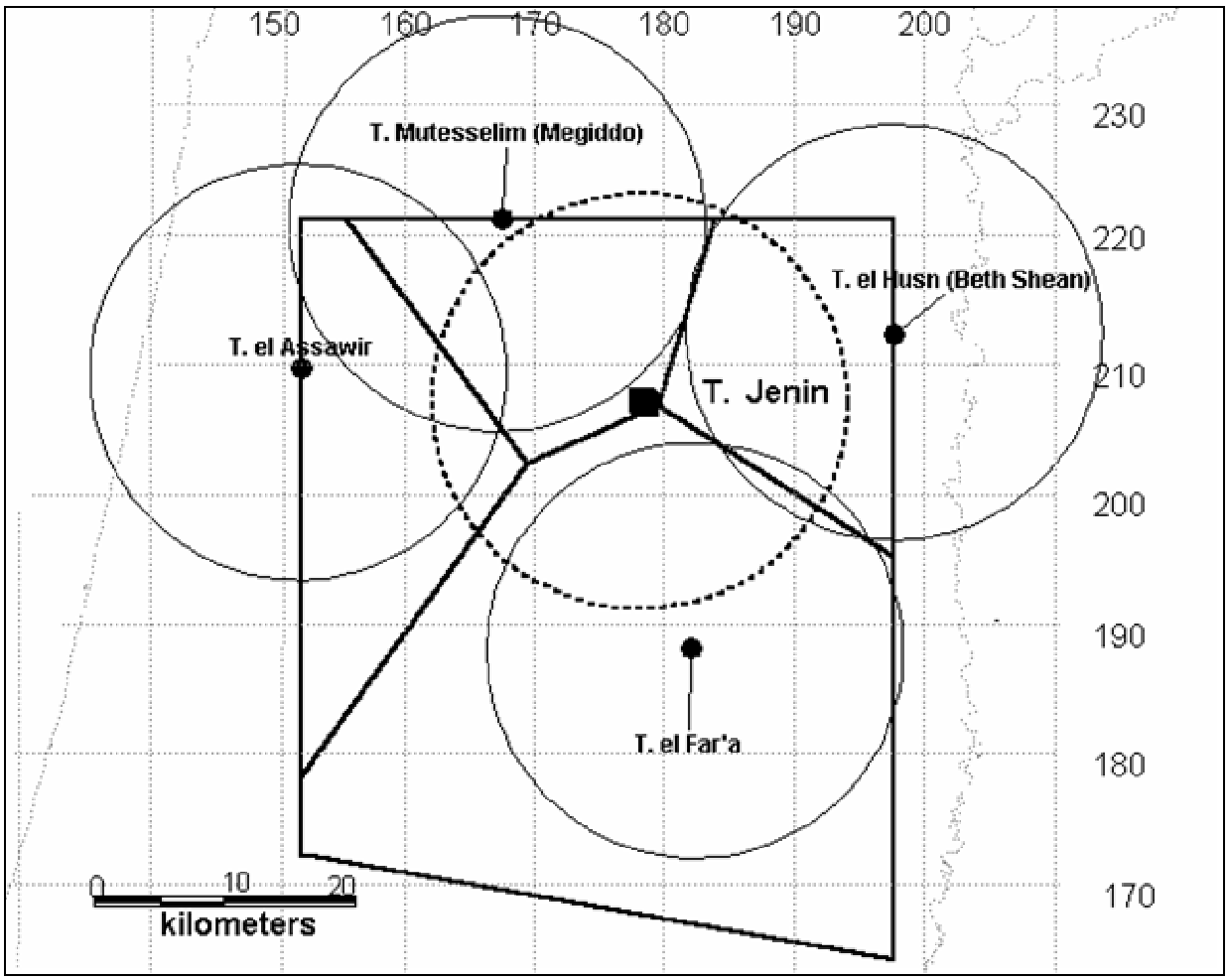
In conclusion, there are tendencies toward a nucleated settlement pattern. The emergence of new settlements, such as Tell Ta'annak, should not be seen as a development of a new settlement pattern in the Jenin region but rather maintaining an old one. Excavated sites such as Tell Dothan suggest that fortified settlements already appeared during the EBI period. It is also a settlement which continues through the EBII-III periods playing the same role. The core area of Burqin formed by small settlements was abandoned during the EBII, when Ta'annak was established. This may suggest a settlement shift toward larger urban centres and so a re-organization of the settlement systems according the to the economic production. This kind of organization may be seen as the start of the city-state system in the northern, which can be explained more by the following section. .

5 CONCLUSIONS

Historical, archaeological and ethnographic data presented above provided a model to reconstruct settlement systems continuity and change in the Jenin region. Because of its location, the region was continuously occupied from the Neolithic until the present time. Also, historical records indicate that the Jenin region was one of the central regions in Palestine. It was a buffer zone between north and south Palestine. The location of the region is one determinant factor in the stability of ancient settlement systems. Therefore, the kind of system adopted in the Jenin Bronze Age may be contrasted to the one that existed during the 19th century chiefdoms. It is a mixture of tribal law and centralized power control. The *fellahin* remained a fundamental element of economic production.

In relation to the Early Bronze abandonment, I tried to answer the question of population fluctuation and movement. I attempted to answer this question by looking at the constraints affecting the settlement pattern, settlement location and size, land use and economic productivity. With this in mind, the data produced from the surveys, though still beyond the ambition of analysing settlement systems, are

Figure 2.5: Territorial Boundaries of Major Sites in Jenin Region.



a source of understanding Tell Jenin's connections during the EBI period. Considering the 16th century records, Esse (1991: 20) recalls that villagers prefer to abandon the lower valleys and occupy the mountain terrains to provide a secure location against the nomadic invasion.

The location of Tell Jenin, for example, unprotected from invaders suggested that it was settled during a peaceful interval during the Early Bronze I. It is an appropriate location fitting the EBI settlement pattern in North Palestine. Then, Tell Jenin inhabitants abandoned the current location in favour of a different settlement system of occupying higher places. A shift in land use did not accompany such shift, since the new living locations were within less than 1 km radius. The issue will be indicated when looking at evidence of village life from Tell Jenin.

The end of this process should not be seen in establishing new large centres to organize a village's affairs, but in continuing a similar one. The EBI villagers developed them. Four urban centres developed in the region, namely: Tell Ta'annak, Tell el- Muhaffer, Tell Dothan and Kh. Bal'ama. Tell Jenin was abandoned when these settlements were developing as urban centres.

In general, an analysis of the archaeological data will propose various settlement systems within the region. The value of the fertile lands and plentiful water resources was appreciated during the several periods. The successful experience with controlling the land and its resources will attract more population to inhabit the region. The EBI settlement system was adopted during successive periods. On the other hand, the eastern mountain lands did not follow

the same pattern during all periods. These lands had a lower productivity than the valleys and mountain plateaus.

Figure 2.3.4 indicates five settlement zones (chambers) being favoured during the various periods. One is in Wadi Bal'ama zone where Tell Jenin is located and another is located in Northern part of Sahel Arrabeh (el Muhaffer) and the southern part of Sahel Arrabeh (Dothan). Another zone is Sahel Sanur (Sanur village and Khiebar), being the most significant sub region throughout history. For example, the villages of Sanur and Arrabeh had been also of most significance during the 19th century tribal war.

Furthermore, each of these zones had its own system. Following a model of 5 km radius area compared with Thiessen polygon territory estimate created small-scale settlement systems with a population not exceeding 5000 persons. Each system had a self dependent economy capable of producing 50% surplus. So, each system would feed twice the size of its inhabitants.

The small-scale settlement systems of the Jenin region could not survive without being connected to a larger network. Figure 2.5 shows the territorial boundaries of the major EBI settlements around Jenin region, as indicated by Thiessen Polygons and the 16 km radius. It agrees with the principle that small-scale statehood is necessary to maintain settlement system equilibrium. This system may have taken advantage of the economically self-sufficient small-scale systems discussed above.

The Tell Dothan system and the southern region fall within the boundary of Tell el Fara'a while Tell el Muhaffer and Kh. Bal'ama fall within the boundary of Tell el- Mutassalim. The Jenin zone is a buffer area between the three larger systems. Tell Jenin is at meeting point between all these EBI territories. However, while the Tell Jenin system falls within the territory of Tell el Mutassalim, in terms of radius it is outside its boundary. The Marj Ibn 'Amir formed a natural pathway between Jenin and Tell el Mutassalim.

However, these conclusions will contradict the argument that a population explosion was a cause of settlement system development in that region. The population decreased during the EB.

If we attempt to relate pottery production to other data from the region two conclusions can be reached from ethnographic study. The first is that the material culture is preserved through time. The same techniques are transmitted by the father to son or mother to daughter. Pottery is produced for domestic and market use. Jaba' village is the only centre of mass pottery production. The pottery forms of the village are distributed first in the region itself and then all over North Palestine. However, the Y'abad potters' case exemplifies a change from domestic to market production.

In this way pottery regionalism may be affected by family relationships. Both pottery productions are dependent on local clay resources, and are a factor of their continuity. Both are also distinguished by form and by manufacturing techniques. Consequently, the pottery traditions of Jenin region are recognizable among other Palestinian traditions. It can be implied also that the region is producing enough pottery forms to be self-sufficient without a need to import from other regions.

Both pottery traditions are centred in large villages, but in different regions. Y'abad pottery is close to the Arrabeh valley and Jaba' is close to the Sanur valley. This is another point to support the argument that pottery traditions are affected by the settlement systems. One can hypothesize that each of the settlement systems in the past may have had its own regional production.

The forms made by the potters of Y'abad are more specialized and strict than the forms made by the potters of Jaba'. If we use the aspect innovation, then it is applied more to the potters of Jaba' because there is more market demand forcing them to create competitive forms. The traditional forms are still the dominant types made by them, but sometimes these are modified by adding new decorative features or other accessories. In fact, the potters are forced to

follow the traditional way of making pottery, making the base as described above, because the means that are more acceptable.

Although the pottery of Y'abad is made for the market, there is no alteration to the forming method or the forms.

In the following chapters, specific details of the EBI development will be given from Tell Jenin. The point is that stratified material culture will best illustrate the detailed aspects of the various cultural systems.