

THE USE OF MAPS TO EXAMINE THE HISTORY AND GROWTH OF RURAL ARAB SETTLEMENT IN PALESTINE 1871-1948

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ABSTRACT

In our paper we examine the phenomenon of the establishment of new rural Arab settlement growth in late Ottoman and Mandate Palestine in the years 1871 to 1948. Due to the lack of fundamental and abundant written primary sources on this topic, the best way for examining the process is through a methodology that combines the analysis of period maps and aerial photos with field work and the examination of other sources such as censuses. Our study begins with the Palestine Exploration Fund maps of 1871-1877. Through a full analysis of the population, settlement patterns and mapping techniques used by the British in this important mapping project a complete picture of rural settlement in this period can be deduced and used as a basis for examinations of change in the rural environment.

By comparing the PEF map of 1880 with the Mandatory maps from the early 1940s we were able to establish the difference in rural Arab settlement patterns. We also examined the origins of the founders of the new settlements and the physical origin of the settlements of themselves. We used Geographic Information System (GIS) to study the data produced.

We next move to an examination of the sedenterization of the Bedouin, a nomadic group that became partly sedentary in the period. Then our study proceeds with an analysis of the aerial photographs and maps produced during the First World War. The most valuable resource for comparison with the PEF map are the detailed 1:20,000 Survey of Palestine maps produced from 1924-1948 and the 1944-1945 aerial photo survey of Palestine carried out by the British. Through an examination of these sources, combined with field work at the sites of the villages, many of whom no longer exist, our project provides an important case study for the use of historic maps, aerial photos and other sources to examine changing settlement patterns, especially when those settlements may no longer exist or have changed radically since.

The findings were significant. A total of 146 new villages recognized by the Mandate authorities were established between 1870 and 1948 with a population of 67,000 people (724 villages in 1880 with a population of 600,000 and 870 villages including the new ones in 1948 with a population of 747,000), A further 26 unrecognized hamlets were also established whose population cannot be determined. The villages included, within their administrative boundaries, 800,000 dunams of land, around 3% of the total land area of Palestine. The settlements which were almost all Muslim, accounted for 6.5% of the total Muslim population of Palestine and 10% of the rural Muslim population

In contrast to previous studies ours focuses on the mapping changes in the settlement patterns of the rural Muslim Arab population of Palestine. Past studies have focused on changes in the settlement patterns of other groups, such as foreign Christians and Jews. Studies on the Muslim Arab population have focused on the existing settlement patterns, without accounting or examining changes in their geographical extent.

THE STATE OF THE RESEARCH

Several important studies have used period maps and census material to chart the historical processes of rural settlement in Palestine. One of the most important studies to systematically examine the extent of Arab villages in all of Palestine has been Wolf-Dieter Hütteroth and Kamal Abdulfattah's Historical Geography of Palestine, Transjordan and Southern Syria which focused on 16th century Ottoman Palestine. There is a gap in the existence of systematic studies that address the extent, village by village, of settlement in Palestine between 1600 and 1948.

Case studies exist of various regions in Palestine. However there is a complete absence of a systematic work to focus on the use of period maps and aerial photos to examine new settlements throughout Palestine during the period 1871-1948. David Amiran and Yehuda Karmon's extensive and pioneering work on the geography and mapping of Palestine serve as a basis for any study of the country in the modern period. Ruth Kark's extensive work on 19th and 20th century Palestine provides a basis for understanding the various stages of development during the period.

SOURCES

This section provides an introduction to the sources used in this research. A more detailed discussion of the maps and aerial photos is also provided in subsequent sections. The numerous data sets including maps

and censuses from the period and the large number of archival material available at the Israel State, PEF and Haganah (the name of the pre-state Jewish militia) archives among others remain untouched for the purposes of a systematic study of period maps and aerial photos to illustrate new settlements that appeared in the entirety of Palestine between 1871 and 1948.

During the 19th century a number of European travelers attempted to provide maps and travelogues that systematically covered the area that would become Mandatory Palestine. The PEF's 1880 map and multi-volume Survey of Western Palestine was the first modern survey of Palestine. Its detail provides excellent information on all of the villages of Palestine from the years 1871-1877.

The next important data for rural settlement in Palestine comes from maps made by the British army in 1917 and 1918 during the WW I conquest of the country. When accompanied by German, British and Australian WW I aerial photos they provide data on the entire country. With the addition of the British census of 1922 a full set of statistics, visual and quantitative, is achieved for the early years of the Mandate (Government of Palestine Census office 1922). These sources provide the most important resources for examining new villages that appeared between 1871 and 1917.

The 1931 census and the British Survey of Palestine 1:20,000 series maps along with the 1944-1945 Royal Air Force aerial survey of Palestine and 1948 Shai (information Service) Jewish Haganah sponsored aerial photos provide complete maps and figures for the last half of the Mandate. The British Village Statistics, which provide population estimates and lists of agriculture to be taxed, may be less accurate but nevertheless provide a picture of the rural Arab villages of Mandatory Palestine (Government of Palestine Census office, Village Statistics 1938, 1945). These sources provide the most compelling evidence for the creation and growth of new villages during the Mandate. The Israel State archive include extensive information on the background to village surveys and censuses, court cases, land purchases and the existence of schools and mosques throughout Palestine.

RESEARCH METHODS

The research is primarily quantitative. By using the 1945 sub-district boundaries of the British Mandate the study in fact worked backwards initially. This is because it is assumed that there were more Arab villages in 1945 than in 1871.

Geographic Information System (GIS) software was used to reconstruct and map the data mined from the numerous maps and censuses available. This presents a visualized map of the geographic extent of the new Arab villages that appeared between 1871 and 1948. In addition it allows for a comparison between the different types of villages that were identified; new Bedouin settlements, daughter or off-shoot villages, and other types of settlements that were the product of foreign, government or effendi investment. Comparisons were made by size, date of origin and type of inhabitant. This aided greatly in drawing conclusions regarding the different geographic areas of Palestine and their affect on the creation of new villages. Mapping the entire area of Palestine using GIS for this phenomenon, when combined with archival work and other analysis provides a full picture.

METHODOLOGICAL PROBLEMS

The research examines the period 1871 to 1948. While the latter date represents a very clear break in the history of the demographics and settlement of Palestine, the former date appears more arbitrary. The processes that affected the settlement of Ottoman Palestine in the 19th century neither stopped nor started in 1871. Many studies have looked to the entry of Napoleon into Egypt in 1798 and Palestine in 1799, or the period of Mohamed Ali's rule in Palestine 1831-1841 as starting points for research on Modern Palestine. However, because this study relies heavily on data and quantification of settlement, it is more reasonable to follow the Wolf-Dieter Hütteroth and Kamal Abdulfattah's approach. They employed the 1596 Ottoman Deftar (population register and household census) It brings the Ottoman daftar-I mufaşşal (detailed registers) from 1596-7 which gives comprehensive statistics on most aspects of economic activity and demographics in the Ottoman Empire. No survey or mapping operation conducted before the PEF survey provides anywhere near the detail or systematic examination of Conder and Kitchener.

One major problem is determining the accuracy of the sources employed. One important point of comparison is between the number of houses listed in the 1931 census and aerial photos from 1944-45/1917-1918. Through the marshalling of resources, including aerial surveys, censuses, maps, Haganah village surveys, The Palestine Post and official documents from government archives in Tel Aviv and London an accurate picture was drawn up for the villages, sites and communities in question.

A further problem is determining what geographic boundaries to use. The boundaries of Ottoman Palestine and its administrative divisions were not the same as those of Mandatory Palestine. This study has chosen to use the sub-districts of the Mandate's 1945 Village Statistics as a basis for a systematic study of the

country. The PEF survey covered the entire area of these sub-districts except for the southern Negev and eastern Huleh.

A separate problem arises in determining which definitions to use. The British authorities classified settlements and places in the Palestine Index Gazetteer of 1945. Our study used the classifications and village boundaries employed by the British as a base alongside analysis of period maps.

In order to surmount the semantic problem of what constitutes a "new village", this study relies on the villages recognized by the British Mandatory authorities. A careful analysis was carried out to check each settlement found on maps and in censuses against the Mandatory statistics.

THE GEOGRAPHY OF PALESTINE

As in any other region the landscape of Palestine played an important role in determining where settlement arose and the forms of that settlement. Palestine is traditionally divided into four distinct regions; the coastal plain, the central highlands, the rift valley and the Negev desert. To these must be added two unique areas known as the Shephelah foothills and Jezreel valley.

Throughout the study reference will be made to these six unique geographic areas; the highlands, the coastal plain, the Rift valley, the Jezreel valley and the Shephelah. These divisions will serve throughout the study to provide a way to examine the distribution of the new settlements

SETTLEMENT PATTERNS 1596-1880

Hütteroth and Abdulfattah recorded 340,200 people in the seven liwas they examined (based on multiplication of each household by 5). For Palestine within the borders of the Mandate period a total of 206,290. In general the trend was towards an increase in population by 1596. Haggai Etkes, who mapped the Liwa of Gaza using these censuses also found a similar increase.. By the 19th century the idensity of settlement is far below that of the 16th century. A map showing these changes between 1596 and 1880 illustrates the decrease. Large decreases were clear in the coastal plain, Shephelah, Jordan valley, Huleh valley and around the Sea of Galilee and on the fringes of the Negev desert. There were slight increases in only a few spots. Haim Gerber has taken issue with this portrayal of decline, arguing that the population of Palestine [in 1596] was probably even lower than in 1800.

THE PEF SURVEY OF PALESTINE, 1871-1877

The Palestine Exploration Fund's survey of Palestine and its accompanying maps and memoirs are widely regarded to be accurate to the degree providing a complete picture of the country and its settled areas. Numerous scholars have used it as a benchmark for comparison in terms of settlement patterns. It has been used a point of comparison by numerous researchers.

The PEF's attempt to map the entire country of Palestine followed in the footsteps of other mapping attempts. In 1799 the French cartographer Pierre Jacotin accompanied the force of Napoleon on their invasion and sojourn in the Holy Land. The Palestine Exploration Fund (PEF) was founded in 1865 under the inspiration of George Grove, a biblical-archeologist and all around Renaissance man. In 1870, heeding calls by cartographer cum explorer and archeologists Charled Warren and Charles Wilson the society decided to dispatch Lieutenants Claude Regnier Conder and Horatio H. Kitchener to Palestine to complete a survey of the entire country based on the latest technology. The Survey was completed over half a dozen years and was met with much difficulty. It began in the country around Ramleh and Lydda and by 1877 the survey was completed with a total of 6,040 miles surveyed. It employed the latest mapping methods of triangulation, base checks, and the use of barometers.

MAPPING BETWEEN 1880 AND 1922

A series of Ottoman maps from 1913, analysed by Ruth Kark, provide evidence of changes in land settlement patterns in the Baysan valley. These were sketch maps copied in French by the Jewish Colonization Association (ICA) in March of 1913 at the Tiberias Ottoman offices. They are all of the Jiftlik lands of the sultan. A 1:10,000 map in the series entitled Bissan: Plan des routes construites en 1316 et 1317 (1913) shows two interesting additions to the settlement pattern north of Baysan. A German First World War map at 1:50,000 scale provides evidence of more settlement activity, although only north of Gaza since they did not survey the southernmost portions of the country.

The British created a 1:40,000 series military map in 1917 during the course of the war. It covered the central and southern portion of the country. One copy of this map was simply the PEF map re-issued by the Survey of Egypt and the War Office on a 1:40,000 scale overlaid with grid coordinates. Several new settlements are revealed on it, such as Kaufakha and Muharraqa, both planned settlements settled by Abdul Hamid II on his lands in the 1890s.

NEW VILLAGES IN THE LATE OTTOMAN PERIOD: SIXTY-NINE NEW VILLAGES 1871-1922

Between the Palestine Exploration Fund's survey and the British census of Palestine in 1922 a total of sixty-nine new Arab Muslim villages and hamlets were established throughout Palestine. They accounted for a population of 11,700 people according to the Census of Palestine completed by the British in 1922. They included at least 342,627 dunams within the British administrative boundaries of the villages.

A majority of the new villages and hamlets established between 1871 and 1922 were concentrated in the highlands of Judea, Samaria and Hebron, in the Baysan valley and in the Shephelah. This accounts for a total of 39 of the 69 villages. A total of 32 of the new villages or 48% were located in the valleys and plains. 18% or 12 villages were located in the Shephelah. 21 villages or 32% were in the highlands while a total of one village, Beersheba, was located in the Negev. This gives a very striking and clear picture; the plains and valleys, together with the Shephelah, accounted for 66% of all the new villages. This means that while some villages did form in the highlands the real area of new development were the lower altitudes. It also indicates that the village formation that did take place in the hills took place in the central highlands (19%) and not in the Galilee (10%). It is not clear from the evidence why there is a difference in these two regions, a more detailed study of this local phenomenon is necessary.

What is more interesting is the fact that in certain areas the development of new villages between 1871 and 1922 was more pronounced than the development of new villages after 1922. For instance of a total of 17 new villages that formed in the highlands of Judea, Samaria and Hebron between 1871 and 1945, fifteen of them were formed before 1922. That represents 88 percent. Thus most of the new villages founded in the mountain regions were founded during the Ottoman period.

The same was the case in the Baysan valley and the Sea of Galilee regions. Of three new villages that would eventually be founded around the Sea of Galilee a total of three (60%) were formed in the Ottoman period (Samra, Nuqeib and Tabgha). In Baysan a total of 14 of the 17 Arab villages that would eventually be formed in this region by 1948 were established in the late Ottoman period.

The evidence suggests that the process of new village formation between 1871 and 1922 heavily impacted areas that already had an existing presence of Arab Muslim villages and that new villages were formed in the border regions between these already established areas and the new, less secure, less inhabited, regions of the plains and valleys.

BRITISH MANDATORY MAPPING

The survey department created maps on the 1:10,000, 1:250 and 1:625 scales for individual villages. The 1:20,000 maps of 1929 and larger 1:100,000 series of topocadastral maps, created in 1938, covered the entire country. Later, in 1942, these maps were corrected. Maps in and of themselves cannot always show whether or not a village is inhabited, and therefore Mandatory era censuses must be used together with the various series of maps produced by the survey.

NEW VILLAGES FOUNDED DURING THE BRITISH MANDATE

A total of fifty-two Arab villages were established in the nine year period between the 1922 census and the 1931 census. These included 2,717 houses, 12,457 inhabitants and 203,282 dunams of land. As was the case with the period 1871 to 1922 their distribution and characteristics were not regular. The British administrative divisions remained, for the most part, the same during the years 1922 to 1945 though there were differences. The evidence for the creation of these new settlements can be found by comparing the German maps and the 1:40,000 British maps with the 1:20,000 Survey of Palestine maps, which were created in the 1930s.

Between 1931 and 1938 nine new Arab settlements appeared in Palestine according to the 1938 Village Statistics. They included 4,646 inhabitants and 82,366 dunams of landholdings (although they didn't necessarily own the land included in their holdings). British Maps unfortunately do not add evidence to the creation of these settlements because they were not updated during this period.

What is interesting about the new settlements that appeared in 1938 is that they all had a relatively high population. This is due to the fact that many of them were established by Bedouins and the Bedouin tribe was thus enumerated with the village. For instance Abu Kishk was a well known large tribe. It had 155 members in the 1922 census and 1,007 in 1931. The Arab Bashatiwa were defined as a "Tribal area" in 1922 and had two branches, the Baqqar with 511 members and Shuheimat with 439 members. Arab al Ghawarina had been part of Kabara prior to 1938.

The geographic location of the settlements tended towards the valleys and plains. This was no surprise given the fact that six of the settlements were Bedouin or tribal groups. Jisr al Zarqa was established by a tribe (Arab Ghawarina and Arab Kabara) who had previously lived in the reeds of the Kabara swamps. The other Bedouin tribes also settled in the areas they had once used as camping grounds.

Settlement fixation was provided by a variety of factors. At Jubb Yosef a large Khan or Caravanserai provided the incentive. It is listed as being inhabited by the Arab Es Suyyad in 1939. At Umm Burj Khalidi notes that "its name was probably derived from a tower that had been erected in the center of the site. Khirbat Umm Burj was described in the late nineteenth century as a ruined village with a central tower that was thought to be recently built." The site also appears on a map from 1918. Shauqa et Tahta was established in the area west of Banias near the Jewish settlement of Dafna, in area with a great deal of water sources. Jisr al Zarqa was established in the area where the swamps of Kabara were in the process of being drained. Abu Zureik was established next to a spring of the same name. It was built in the middle of the Jezreel valley northeast of Abu Shusha.

The appearance of the settlements matched their origins and locations. All of the Bedouin settlements appeared in the typical Bedouin manner of dispersed households. Abu Kishk consisted of a series of isolated homesteads, aerial photos from 1944 show that little had changed by that period. Jammasin al Sharqi consisted of the same. Jisr al Zarqa (bridge over the Zarqa) began around a ruin called Kh Shomariya. This ruin could not have been too extensive for it was not located by the PEF. Umm Burj and Jubb Yosef were built around their points of fixation, the one around the Caravanserai and the other around the ruin and tower.

Judging by the differences between the 1938 and 1945 Village Statistics it appears that 28 new villages arose in this seven year period. In fact this is not entirely the case. Daughter villages such as Beit Umm al Meis and Kh. Kunnisa (Kunaiyisa) arose earlier and they were included under other enumerations in 1931. Arab Nufayt and Dumeira were included in Al Khudeira in 1931. Both Kh. Sasa and Warrat Sarris were included in Shfar'amr suburbs in 1931. Darbashiya in 1938 was listed with no population and does not appear in Mandatory records until 1940 when it was subjected to land settlement. Almin is also listed in 1938 with dunams but no population. Maps from the period indicate that many some of these villages were established before 1938 but in the interest in remaining systematic and having this study remain census driven they are included here. To include them in earlier periods would cause problems because it would necessitate including many of the other daughter villages and separate enumerations that existed in 1931 as separate entities. In the final analysis to claim that 28 new villages were established in these seven years is not accurate. It is fair to say that 28 new villages appeared in the Statistics as separate entities with populations during this period. The settlement of some of them predated 1938.

In some cases the tremendous growth of a settlement can be seen on Aerial photographs. Deir Muheisin is one such example. This village had 113 residents in 1931, 129 by 1938 and 460 by 1945. Normally one might consider this 307% increase in only 14 years extraordinary and perhaps problematic. Yet Shai aerial photos from 1948 show clearly that the village truly expanded greatly, increasing in size by a factor of five in terms of the total area covered by houses. It grew out along a road, expanding from a small core to a large dispersed settlement. What precipitated this growth is not clear and it does not logically follow that it could have been due to natural increase. But if the village was established as an off-shoot, it had not existed in the 1922 census, then where did the villagers come from? If they came from a nearby village it is not clear if the census took this population transfer into account. At Jahula we see an increase of 96% between 1922 and 1945. The Shai photos show that this is quite reasonable. When compared to the map the photos show a large growth from a few houses to a village on both sides of a road.

The updates made to the Survey of Palestine maps made in 1942 show some of the new villages. Notable examples include the Bedouin settlement at Jisr al Zarqa in the Sharon and at Hakamiya/Bawati in the Baysan valley. The best evidence for the new villages comes from the Aerial photos carried out by the Haganah in 1947-1947 which were usually done at a low altitude and were frequently taken from an angle as the plane careened over the site, providing a great level of detail but often leaving out the wider context of the landscape and sometimes only showing part of the village. They are in contrast to the British aerial photos of 1944/45 and 1917/18 respectively which were taken from a uniform altitude of 15,000 feet. The photos provide evidence for new hamlets at numerous locations, such as Ein Rafa in the Jerusalem hills, Abu el Ghannem near the Jezreel valley, Jisr al Zarqa on the Sharon plain and Beit Auwa in the Hebron hills. What the aerial photos cannot tell is whether the places were inhabited, which is where the censuses contribute to our understanding of the settlement history. The Haganah photos however are taken at such a low altitude that people can sometimes be seen in them.

CONCLUSIONS

There were 146 inhabited new Arab settlements recognized by the Mandatory authorities in 1945. By examining maps and aerial photos and comparing them to other archival and government collected demographic material, this study concludes that 170-195 new Arab settlements were established and

permanently inhabited between 1871 and 1948 in Palestine (in addition to 900 villages that numbered 750,000 souls that existed in 1871-1922).

The new settlements were almost entirely built in the lower altitudes of Palestine; along the coastal plain, in the Shephelah and in the Rift valley. Ruins, including sheikhs' tombs and khans, provided the most common form of settlement fixation. Fully 97 settlements were founded on ruins. 66,940 settlers were found living in the new settlements and 831,486 dunams was classified administratively with the newly settled villages by the Mandate. This figure does not indicate that these lands were owned by the villagers in the settlements, in most cases it appears the land was not owned by them.

Settlements were bunched together in certain regions, primarily in the Shephelah, the Baysan valley and the Rift valley north of the Sea of Galilee. In general the origins of the settlers tended to determine the type of settlement created. Settlements founded by Bedouin tended to be in flat country and consisted of a more dispersed layout. Settlements founded as daughter villages by Arab peasants (fellahin) tended to either be close to water sources or along ridges and hilltops.

The study sheds light on the degree to which the rural Arab population transformed the countryside of Palestine in the period. The internal migration of the population, and immigration of several foreign Muslim groups such as Circassians, Algerians and Bosnians, contributed greatly to the changing map of rural settlement. Muslim population movements mirrored Jewish immigration in the areas targeted for expansion. This resulted in the extension of settlement to the lower altitudes of Palestine; the coastal plain, rift valley and to a lesser extent the margins of the Negev. Although the new Muslim villages tended to be small they were also numerous.

The study raised important questions about the reliability of the Mandatory population estimates. Through an analysis of the growth rates ascribed to the villages and comparisons made with the actual growth of the villages on maps and aerial photos there does not always appear to be a correlation. In addition it is clear the Mandate authorities did not account for the internal migration of villagers moving from a parent to a daughter village. However the problems with the Mandate censuses does not discount them as an essential source for studying rural population growth. Because the British maps were not updated on a uniform basis, the study had to compromise between using maps and census figures. Thus the PEF's 1880 maps were used as a basis for the Ottoman period while in the Mandatory period the censuses were used as the primary data set to examine cross-sections of the country. The final study reveals that the reliability of maps and population estimates can be questioned through a careful analysis of the two side by side with aerial photos and other information. This research has shown that this process can be useful and is a key to researching the development of rural settlements and their patterns when written sources are absent. This is especially true in cases where the rural settlers were illiterate, as in the case of Palestine, and there is an absence, or lack of government information on them. In the aftermath of wars and mass population movements this can be a key to providing a history of such settlements. This could have a further application for the study of Greek settlement patterns in Turkey before 1922, Armenian settlements in Turkey before 1915 and Hindu and Sikh settlements in Pakistan before 1948. It can also serve as a basis to study the growth patterns of rural populations throughout the world, in places unaffected by major movements of people.