

THE IMPACT OF BOUNDARIES ON PATTERNS OF RURAL SETTLEMENT: THE CASE OF SAMARIA (ISRAEL) ¹⁾

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Abstract: The superimposition of the Jordanian-Israeli boundary line, in 1949, on the western and northern fringes of the Samarian Highlands, created a frontier zone in which the geographical characteristics of the rural settlements underwent rapid changes. These changes reflected two main trends. One, spontaneous uncontrolled consequent processes – on the Jordanian side of the frontier – such as de-population, with the development of anomalies in the demographic structure of the remaining population, transformation in the pattern of agriculture and other economic activities, changes in site and layout of villages as well as in their spatial organization. Two, on the Israeli side, a carefully planned and strictly controlled new spatial pattern of rural settlement with rapid increase in population, intensification and expansion of economic activities and conspicuous changes in the landscape.

The examination and comparison of the effects of the newly formed border, with its extreme separation functions, under two contrasting political and administrative systems, presents an instructive lesson in Political Geography. So does the study of the geographical transformation processes which have been taking place in the same area since the removal, in 1967, of this boundary line.

A newly formed political boundary between sovereign states, cutting across a region which for a long time (prior to the appearance of the new boundary) was undivided, will cause significant changes in the cultural landscape of the newly created frontier area, especially in the pattern

and functions of rural settlements and in the behavior of their inhabitants. This is particularly true where we have a superimposed boundary with little or no contact across the new boundary, due to tension and hostility. The nature and extent of these changes will depend on a combination of factors inherent in the natural and human character of the region, and the conditions produced by the new boundary. In many cases, these changes in rural communities in newly formed frontier areas were dominated by government policies and subjected to planned measures and strict control. There are, however, cases where developments in such new frontier areas were to a large extent, allowed to take a “natural” course. Of special interest in these latter cases are alterations in site and pattern of villages which reflect the new conditions, brought about by the boundary, under which the inhabitants find themselves ²⁾.

1) This article is the product of detailed studies of the area discussed, carried out during 1968–77 by senior students of the Department of Geography, Tel Aviv University, within the framework of a series of seminars in Rural Geography and Political Geography under the supervision of the author. In addition to intensive field work during which each village and its environment were carefully surveyed, a wide range of official documents and publications as well as local village note books and oral information provided the data on which the observations and conclusions are based. Among the sources used are: Returns of British (1922, 1931), Jordanian (1952, 1961) and Israeli (1949, 1961, 1967, 1972) censuses, statistical bulletins and reports of the Government of Palestine (British) and the Jordanian and Israeli Government, German (1917), British (1944) and Israeli (1954, 1967, 1977) air photographs of the areas concerned, village plans and cadastral maps.

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2) BOGGS, S.W.: *International Boundaries*, New York, 1940.
 RAUP, P.M.: *The Agricultural Significance of German Boundary Problems*. *Land Economics* 26, 2 (1950)
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Similarly, the removal of an international boundary, especially where it had a strong apparent impact on the cultural landscape and on the spatial settlement system, will result in the initiation of processes which will alter the geographical characteristics of what was previously a frontier zone. This, again, is particularly true of boundaries which functioned as lines of extreme separation between the areas and peoples of the states involved.

The study of these changes in the characteristics of rural settlement in both these situations can throw much light on the nature of geographical processes consequent on the emergence or elimination of a boundary. This may provide some practical lessons for regions where the settlement of existing territorial disputes may lead to the creation of new boundaries in certain areas, accompanied by the “de-frontierization” of other areas. Further, it may help to solve some so far unanswered questions concerning the pattern of rural settlement and land possession and utilization systems in environments, in the Middle East, which at some stage in their history were frontier areas.

The Jordanian-Israeli boundary in Samaria, formed in 1949 and removed (as an international boundary) in 1967, presents a unique case for such a study. Here we find not only extremely rapid and striking changes in pattern, site and economic activities in the villages in the newly created frontier zone, but also the possibility of drawing comparisons between carefully planned and controlled developments on one side of the boundary (the Israeli side) and what may be termed processes of “natural evolution” on the other (the Jordanian side). A sweeping transformation of the cultural landscape and the spatial organization of settlement took place in the Israeli part of the new frontier zone, while in the Jordanian part, villages shifted from sites which they occupied for centuries, underwent changes in pattern and developed demographic and economic trends different from those of villages well away from the border. Factors which for many generations had dominated the location and pattern of rural settlement and the behavior of its population disappeared or became of minor importance in the new situation. A completely new set of factors, related to the functions of the new superimposed boundary, created conditions to which villagers in the frontier belt had to adapt themselves quickly.

Characteristics of Villages in the Samaritan Foothills

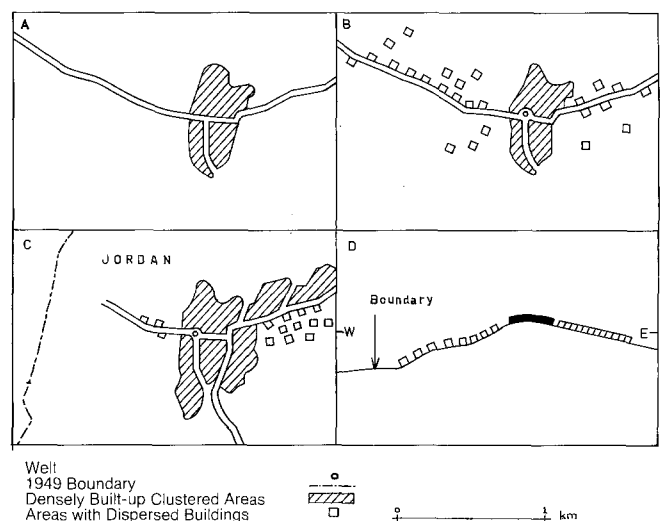
Before examining the main changes which affected the above mentioned frontier zone, it will be necessary to define the area involved and provide some background information on the character of the terrain and its rural settlement. The study concerns an approximately five kilometer wide belt on each side of the 1949–67 Jordanian-Israeli boundary in Samaria. It is within this belt that the

settlement pattern on the Israeli side and most villages on the Jordanian side were subject to conspicuous changes as a direct result of the new boundary. This boundary is locally known as the “Green Line”, a term often used in official documents and in government and scientific publications, because following the creation of the boundary, in the 1949 Jordanian-Israeli armistice agreement, this line was overprinted in green on official Israeli maps. The frontier belt under considerations is mostly confined to the western and northern lower slopes and foothills of the Samaritan highlands, an area of moderate relief, rising from 100 to 300 meters. It is a well-rounded Karstic landscape, with dry valleys, barren hilltops and terraced slopes. It also includes the eastern fringes of the undulating alluvial coastal plain. This coastal plain, to the west, and the intermontane basins to the north were highly malarial until the 1920s. In the past, this and security requirements drove human settlement up to the foothills and slopes of the highlands, though much of the cultivated land of the local villages was in the adjoining lowland areas. The 1949 Jordanian-Israeli boundary separated many of these foothill villages from their agricultural lands in the lowlands which had provided a substantial part of their subsistence (Fig 1).

Fig 1

Typical Arab Village (Irtakh) on the Samaritan Foothills.

A. The built up area in 1922. The village consists of three continuous blocks of buildings on top of the hill. The well can be seen in the centre of the village. B. The pattern of the same village in 1947. C. The village in 1967. The dotted line indicates the position of the Israeli-Jordanian boundary. D. Cross-section in an east-west direction of the hill on which the village is situated. The initial position of the village (A) can be seen on top of the hill. The Westward expansion during the period of the British Mandate (B) and the eastward expansion since 1948 (C). The arrow indicates the position of the boundary during the period 1948–67.



Let us first turn to the rural settlement on the Jordanian side of the Green Line. The location of villages in this belt is dominated by two main factors: Considerations of security and the availability of water resources. Both these factors have carried much weight in the choice of settlement sites over much of the Middle East and the Mediterranean basin since ancient times. Under the conditions of insecurity which prevailed, for many generations in the coastal plain of Samaria (which had hardly any sedentary population and was sparsely inhabited by nomads) defence requirements, in many cases, received preference in the choice of settlement site. Thus, many villages are situated on hilltops or upper parts of slopes, while the springs, or wells, or cisterns from which they draw their water are located in the valley below. Problems of security were also responsible for the pattern of the village. The villages in the area discussed, all of which are inhabited by Arabs, are of the "Haufendorf" type, i.e., highly clustered, crowded villages consisting of small, stone, one-floor houses, pressed into a small area and forming several continuous blocks of buildings, separated by narrow tortuous lanes. The separation into several blocks of building reflects the social division of the village. Generally, the inhabitants of the villages in the area under discussion are divided into a number of clans (Hamula in Arabic). The population of some small villages consist of only one or two clans while that of the few larger villages of four to six. However, in each case, the pattern of the built up area reflects the social structure of the population. Villagers used to reside only within the block of buildings of their respective clans. Violent conflicts between clans were common in many villages, so that often each block formed a closed compound for defensive purposes. Thus, internal and external security considerations have, in many cases, determined to a large extent both the site and pattern of villages in Samaria.

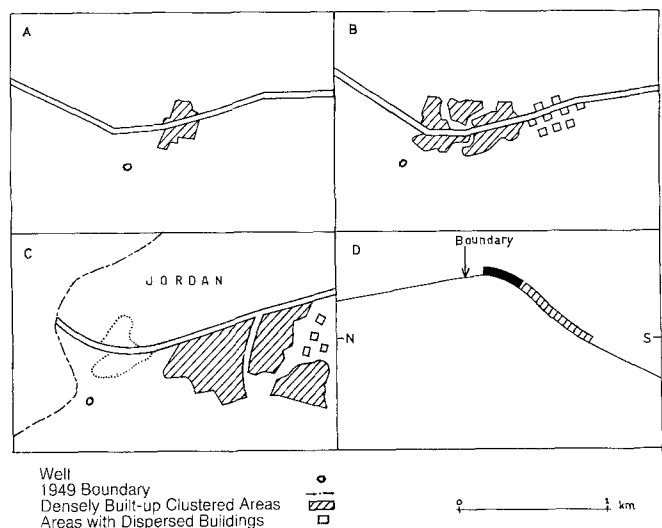
Effects of the British Administration (1918–1948)

The establishment of the British administration in Palestine (1918) brought with it, during the 1920s, the imposition of law and order in most parts of the country. Consequently, the security considerations which had prevailed for centuries disappeared or lost much of their importance. In the 1930s the pattern of villages in Samaria began to show signs of changes, coupled occasionally with a slow, gradual shift in the site of the village. New scattered houses, increasing in number from year to year, spread well outside the clustered built-up areas of numerous villages. In a good many cases these new houses formed a kind of a separate "écart" on a site with different topographic properties in the vicinity of the old village. As this trend grew stronger some villages developed a new pattern which became a combination of a clustered (Haufendorf)

Fig 2

Typical Frontier Village on the Slopes of the Samarian Highlands (Zeita)

A. Pattern of village in 1922. It consists of two blocks of buildings. B. The village in 1947. It expanded both westwards and westwards, consists of five blocks and some dispersed houses. The two most easterly blocks (on the right) include the older parts of the village. C. The village in 1967. The western part of which had been abandoned. There is a considerable expansion eastwards which swallowed most of the dispersed buildings. The dotted line indicates the position of the boundary. D. Cross-section, in east-west direction, of the slope on which the village is situated. The position of the village in 1947 (B) and in 1967 (C) is indicated. The arrow marks the location of the boundary.



and a street (Strassendorf) village, while in other cases villages situated previously on top of a hill started to "creep" downwards towards the valley, their older highest parts being abandoned and their newer, much lower parts being dispersed and more spacious.

The villages on the western and northern fringes of the Samarian highlands, namely, the region which was to become a frontier zone after 1948, were affected by two additional developments. First, the malarial swamps, which had forced them into the foothills and which were responsible for a death rate much higher than that in villages further up the highlands, were drained, during the 1920s, and malaria was totally stamped out. This resulted in a greater natural increase of the population. Furthermore, the villagers were now able to move their dwellings to sites much nearer to their most productive agricultural land in the lowlands. Second, during the 1920s and 1930s, the coastal plain adjoining Samaria became the most densely populated and highly developed part of Palestine. The rapid expansion of intensive modern commercial agriculture (mainly the production of Jaffa oranges), as well as urban and industrial growth, put the villages, in the belt under

consideration, in favorable proximity to an area with a swiftly increasing labor market and demand for farm products (mainly vegetables).

These developments led to significant changes in the site and pattern of the villages, as well as in their economic and social structure and relationship with the environment. For centuries, the villages on the western and northern fringes of the Samarian highlands had been oriented towards the interior of the highlands due to the desolation and health hazards of the neighboring lowlands. During the 1920–1948 period, the orientation turned almost fully towards the lowlands. The traditional subsistence agriculture of these villages gave way to market gardening and cash crops to meet the requirements of the rapidly growing urban population of the coastal plain. As the villages expanded they gradually “crept” down the foothills towards the lowlands, acquiring, in this process, a more dispersed and linear pattern. The expansion of the villages was brought about not only by the natural increase in population, but also, and in some cases, mainly, by large immigration from other villages in the interior of the highlands and from neighboring countries. These migrants were attracted by the favorable employment opportunities provided by the dynamic modern urban and rural economic development of the lowlands, employment opportunities of which many native villagers from the western and northern fringes of Samaria availed themselves. Many villagers supplemented their income from farming by seasonal work in orange groves in the coastal plain. These economic developments brought about a substantial rise in the standard of living which, from the 1930s onward, brought about much improvement in the standard of housing.

Between 1922 (census) and 1944 (village statistics)³ the population of these villages grew by 87 % (the average natural increase was 68 %). The built-up area, over the same period grew by approximately 110 %, while the number of houses outside the clustered blocks, which was very small at the beginning of the period, increased to nearly 20 % by the middle 1940s⁴. Social changes were another con-

3) Village Statistics was published by the Government of Palestine (British) in 1945, following a country wide survey, mainly of rural areas, carried out in 1944. This publication provides information on land ownership and land utilization in each village, and on the size and ethnic composition of the population.

4) The comparison was made, for a number of typical villages, with the help of air photographs taken by the German Air Force during WW I (1917) and by the British Royal Air Force during WW II (1944) and cadastral maps and village plans from the 1920s and 1940s. The fact that new building methods and materials were introduced in the early 1920s (e.g., the use of cement and iron rods which led to the replacement of the domed roofs by flat concrete roofs) was of great help in the field work in the villages, in establishing the extent of the built-up areas of that time, especially in villages for which we have no air photographs from WW I.

sequence of the developments noted. The migrants who settled in these villages considerably increased the number of landless families. By the 1940s these families became a substantial part of the village population (as much as 30–35 % in several villages) in which they had been only a small minority in the early 1920s. These landless inhabitants were also outsiders in respect to the clans of the native villagers. Thus, a comparatively large inferior social stratum came into being in these villages. On the other hand, their ability to find employment and maintain themselves on wages earned in the neighboring lowlands considerably diminished their dependence on the “upper class” of the village, improved their lot and raised their prestige.

The Jordanian Side of the Frontier

These were the trends in the development of the villages, on the eve of the events which led to the formation of the Jordanian-Israel 1949 armistice line (actually an international boundary during the period 1949–67). For most villages in this area the immediate effect of the superimposition of the political boundary running through the western and northern fringes of the Samarian highlands were as follows: 1) Loss of their agricultural lands in the lowlands. The villagers had no access to their lands across the border. 2) Loss of income from employment in rural and urban areas in the coastal plain, the hardest hit being the migrants who settled in these villages during the years of the British Mandate (1918–1948). 3) Loss of markets to which most of the agricultural products of these villages were destined. 4) Deprivation of access to modern services and the modern communication network of the coastal plain on which the population of these villages was largely dependent.

It should be pointed out that during the entire period of its existence (1949–1967) this section of the Jordanian-Israeli boundary was totally sealed; there was hardly any contact or movement across this border. Moreover, there was frequent tension along the newly formed frontier zone, with numerous border incidents and constant fear that hostilities might erupt. This resulted in a growing tendency on the part of the villagers on the Jordanian side to move out of sight of the border. Not only was the previous trend of the villages to sprawl westward down the slope leading into the plain completely arrested, but the built-up areas of the villages began to expand in the opposite direction, eastwards into the highlands. Numerous houses and even complete blocks on the slopes facing west were abandoned in favor of the new houses out of sight of the other side of the border. In some cases this involved the shifting of much of the village to topographically less convenient sites or even away from its main water resources. In view of the fact that most of the villages on the Jordanian side of the boundary had lost much of their land the shift in site and

the changes in pattern were made with great care not to waste any arable land. This often manifested itself in the reversal of the trend of dispersion which had been characteristic of the development of these villages before 1948. In some cases the newly built areas of the 1950s were again clustered and extremely crowded. In other cases, the post 1948 newly built-up area, replacing abandoned parts of the village or serving the increase in population formed a separate *écart*, located hundreds of meters away from the main part of the village.

The Jordanian authorities did not intervene to control or guide either the changes in site and pattern or other developments in these frontier zone villages. It is only indirectly (and apparently unintentionally) through some economic aid and the construction of new roads that in a number of villages they had some impact on the transformation in their site and pattern. The villagers were left to react in their own “natural” way to the new environmental conditions imposed on them by the boundary.

Changes in Agriculture and in Landscape

Another development was the considerable expansion of agriculture in the areas which remained in the possession of these frontier villages, east and south of the new boundary. Slopes with comparatively high gradient and poor soil mantle, previously used only for grazing, were gradually terraced, partly cleared of stones and cultivated. The energy and skill of the villagers directed before 1949 to the richer and more remunerative land of the plain, were diverted to the stony hillsides previously considered unworthy of the effort of ploughing and planting. Thus, much of the hilly surroundings of these villages, which had for centuries looked desolate, within a short span of less than 20 years was partly covered with citrus and olive groves, orchards and field crops. A conspicuous result of this development was the expansion of the citrus growing area, which up to 1949 had been confined to the plain, into the foothills of Samaria, despite the fact that soil and climatic conditions are less favorable and production inferior in quantity and quality. This led to a remarkable change in the landscape over much of the Jordanian side of the frontier zone. However, the amount of labor invested in the “conquest” of these new lands by primitive means was very considerable while their productivity was generally very low. Only the situation brought about by the imposition of the new boundary, which caused great under-employment and unemployment in these villages, and made many villagers destitute, could have sparked off this process, which went on until mid-1967.

Cut off from the densely populated coastal plain, the villages on the Jordanian side of the frontier belt lost the markets for their products, and no substitutes for these

Fig 3 The Israeli Side of the 1949–67 Jordanian Israeli Border.

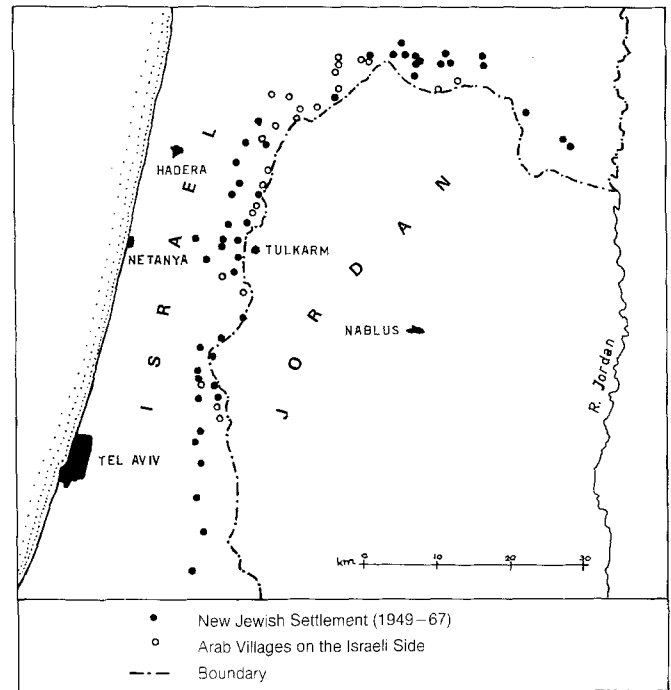
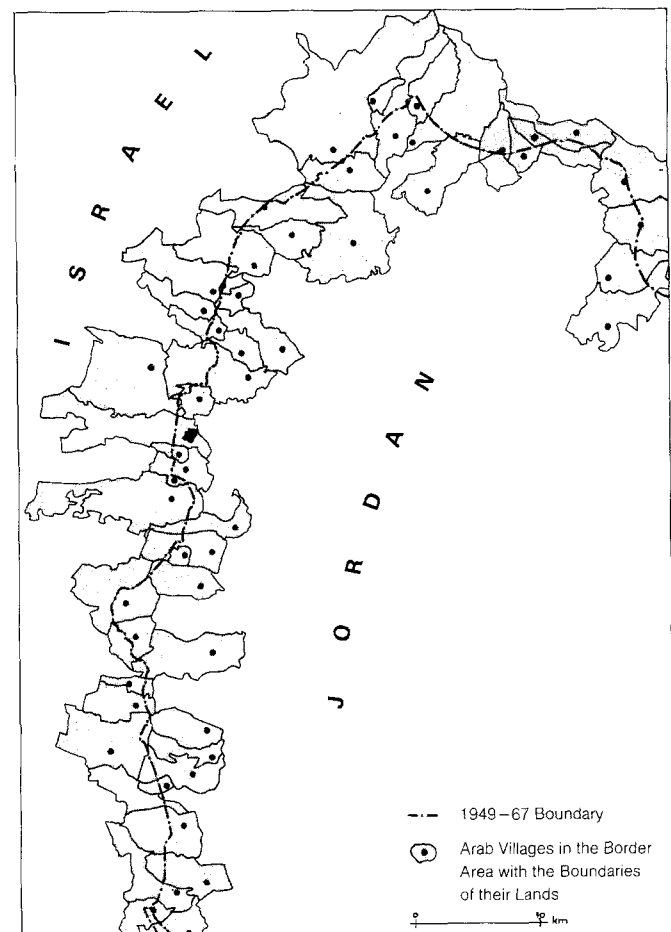


Fig 4 Arab Villages on the Jordanian Side of the 1949–67 Border.



markets could at first be found. The villagers were, therefore, forced to revert, to a large extent, to the kind of subsistence agriculture which they had abandoned in the late 1920s and in the 1930s. This by itself caused some changes in the cultural landscape and entailed a lowering in the standard of living. Only in the early 1960s as a result of the construction of new modern highways from Jordan through Iraq and Saudi Arabia, new markets in the Persian Gulf states, opened for some of the agricultural products of these hard-hit villages. The demands of these latter markets for certain farm products had a strong impact on the pattern of agricultural activities in some of the frontier villages during the 1960s. The expansion to these new, comparatively far markets revived the emphasis on market gardening and the production of fruits not grown in the Persian Gulf region, especially oranges. The profit from agricultural products marketed in the Persian Gulf states were low due to the high cost of road transportation over long distances (1300–1500 km) in desert areas, damage en route (due to climatic conditions and improper packing) and the large share in the returns taken by the middlemen who actually organized the shipment of the products to the urban centers of Kuwait and Eastern Saudi Arabia.

Emigration from the villages of the Jordanian part of the frontier belt was another development resulting from the establishment of the new boundary. The loss of a substantial part of the sources of livelihood, the lowering of

the standard of living, unemployment, the general reversal of the trend toward progress and the insecurity due to numerous violent border incidents drove many villagers, especially young men, to migrate to the East Bank (regions of the Kingdom of Jordan east of the Jordan river) and to other countries, mainly to the rich, oil-producing states of the Persian Gulf. Begun in the early 1950s, this emigration gathered momentum in the early 1960s and depleted some of the villages of many of their young men (the 16–29 age group). This is clearly reflected in the current anomalies in the age-sex pyramid. Thus, for example in the 16–29 age group in some of these villages, in 1967 (census) there were 39–64 males for every 100 females, whereas in 1952 (census) the number of both sexes was almost equal. While the population of Jordan increased between 1952 (census) and 1961 (census) by 27% (all by natural increase) that of the frontier villages in western and northern Samaria decreased by 6%⁵). Comparing the population figures for 1944 (Village Statistics) and 1967 (census) it becomes evident that there was a high rate of emigration from these villages as a result of which the population of most of them decreased substantially. Had the demographic trends of the 1940s continued, the population of these villages would by 1967 have increased by more than 80% over the 1944 figures.

5) Figures are based on the Jordanian censuses of 1952 and 1961 and of the Israeli census (of Judea and Samaria) of 1967. More recent figures are estimates based on village note-books in which births, deaths and migrations are recorded.

Tab 1

Typical Arab Frontier Villages in Samaria – Increase in Population 1922–1977

Village	Population 1922	Population 1944	Increase in % 1922–44	Population 1967	Increase in % 1944–67	Number of males per 100 females in 16– 29 age group in 1967	Population 1977 (estimate)
A. Jordanian side of the frontier							
Jalbun	405	610	51	842	38	81	1080
Zabuba	380	560	45	560	0	64	740
Rumana	548	880	61	819	– 7	82	1090
Zeita	1087	1780	64	903	– 49	39	1160
Shuweika	1568	2370	51	2114	– 11	81	2700
Kafr Jammal	396	690	74	748	8	70	980
Irtah	590	1060	97	865	– 18	74	1130
Habla	271	580	114	968	67	82	1270
Qibia	694	1250	80	923	– 26	68	1180
Budrus	334	510	53	381	– 25	51	510
B. Israeli side of the frontier							
Sandala	146	270	85	530	96	98	720
Umm El Fahm	3033	5490	81	9980	82	98	13900
Arara (Ara)	1107	2290	107	4490	96	99	6100
Baqa El Gharbiya	1443	2240	55	5950	165	98	8300
Tyiba	2350	4290	83	9940	129	100	14200
Kafr qasim	661	1460	122	3580	145	99	4870

To sum up — The effects of creation of the 1949 boundary of Samaria on 38 villages on the Jordanian side of the frontier belt were as follows: Changes occurred in site and pattern of villages, in the cultural landscape and in the nature of farming activities. Economic progress stopped, the population decreased and demographic anomalies developed due to large scale emigration. A complete turn about took place in the previously westward oriented relations with the environment and urban centers.

The Israeli Side of the Frontier

Now let us turn to the Israeli side of the new frontier zone. The trends and processes to which the rural areas on the western and northern fringes of the Samarian highlands were subject in the 1930s and 1940s continued almost uninterrupted, after the new boundary came into existence in 1949, in so far as the 23 Arab villages on the Israeli side of the frontier are concerned. The transformation processes in these villages were considerably hastened from the mid 1950s on as a result of the rapid increase in the population of the lowlands and the dynamic economic growth which followed the birth of Israel. Nearly all these villages continued to sprawl westward from their original site, and evolved an extreme change in pattern which left little of the pre-1920 physical characteristics of the village. Agriculture became highly intensified and modernized, the products destined almost exclusively for the urban markets and for export. The population of these villages grew by over 80 % during the 1949–67 period almost entirely by natural increase, reaching an annual natural increase rate of nearly 4 % in 1967. More than half the adult male labor force (the 18–44 age group) found employment outside the villages, mainly in the urban centers of the coastal plain, and commuted daily to work. The standard of living rose very substantially as did the dependence on the economy and the services of Israel's highly urbanized coastal plain.

Thus, the Arab villages on the western and northern fringes of the Samarian highlands, which were all very similar in their geographical characteristics, before 1949, developed into two dissimilar groups of villages divided by an international boundary, each of which acquired completely different physical, economic and administrative features and became subject to different transformation processes. However, the nature of the transformation processes which took place in the Israeli part of the frontier belt and the pattern of rural settlement and economic activities were subject to the careful planning and control of governmental bodies. A total of 46 new settlements, all of them inhabited by Israelis (Jews), with a total population of over 20,000, were built and developed during the 1949–67 period on the Israeli side of the 130 km long new frontier belt in Samaria. The sites of these new settlements

were so chosen as to give their inhabitants a good view of much of the frontier zone and also to place them as close as possible to the lands from which they derived their livelihood. Nearly all of these new villages have a modern, very efficient, intensive, irrigated agricultural economy producing cash crops. They are all either cooperative (Moshav) or communal (Kibbutz) villages with a very progressive socio-economic structure, associated with country-wide or national federations in coordination with which they plan their agricultural production and market their products.

These frontier settlements were all built in accordance with pre-prepared plans designed to fit the physical characteristics of the site and the environment as well as the economic and other functions assigned to each such village. Most of them have a linear pattern with functional divisions between their residential, communal and farmstead areas. Strung along the frontier belt, so different in appearance and character from the Arab villages, among which they are planted, these new settlements have introduced far-reaching changes into the physical and human landscape of the Israeli part of the frontier belt in which they have established a new spatial distribution and organization of the rural population. The contrast in the nature of the cultural landscape between the Jordanian and Israeli side of the frontier belt was so sharp that it was possible to identify, with considerable accuracy, on air photographs, over long stretches, the exact location of the boundary line even where it was not demarcated.

The main burden which the proximity to the border put on these young Israeli frontier settlements was the compulsion to provide stringent security measures to protect themselves against hostile infiltrations from across the border. On the other hand, they benefited from certain economic privileges and special financial subsidies as part of the government plan to settle and develop the frontier zone. Thus, while on the Jordanian side of the frontier belt the trend was that of de-population and movement away from the border, the reverse happened on the Israeli side, where there was a substantial continuous growth in population and settlements, and the cultivated land expanded towards the boundary.

The Removal of the Boundary in 1967

The processes and trends outlined above characterized the rural transformations in the frontier belt (of Samaria) on the respective sides on the border, when this border was eliminated almost overnight early in June 1967. The international Jordanian-Israeli border moved 45–50 km to the east, to a different geographical region (the Jordan Rift Valley) to run along the river Jordan. The “Green Line” became an administrative boundary, with different

functions, which permitted (and a short time later encouraged) free contact and movement (of people and goods) between the Samaritan highlands and the lowlands to the west and north. This created new conditions, and set in motion new trends and processes in the rural areas on the western and northern fringes of Samaria. Obviously the effects of the new situation have been much stronger, faster and more conspicuous on what was the Jordanian side of the former frontier zone, since 1967 under Israeli administration than on the Israeli side of this zone.

The changes since 1967 in the Israeli part of the Samaritan frontier belt have been the relaxation or even abolishment of security measures which had made great demands on the manpower of border settlements, the loss of special privileges and economic aid, as government policy now considers the area a "normal" part of the interior of the state. Agricultural production has increased considerably in most of these former frontier settlements, partly due to the introduction of hired labor now drawn from the Arab villages across the "Green Line". Some industries have been established in this zone, much of their labor force too coming from the villages in what had been Jordanian territory. Many of the inhabitants of these former frontier settlements have, since 1967, turned for low threshold services to townships across the former border as these are cheaper and more easily accessible than the centers they used to go to before.

In the formerly Jordanian part of the frontier belt after 1967 again developed a westward orientation towards the coastal plain. The change in pattern is now manifested by an intensified dispersion process (tied to the economic transformation discussed below) now spreading mainly towards the lowlands or along the road connecting each village with the transportation network of the lowlands. Coupled with the diffusion of the villages and other transformation processes is the break up of the traditional clan segregation, a development which went on very slowly in the 1940s and 1950s.

The most impressive and far-reaching development has, however, taken place in the pattern of economic activities and sources of livelihood of the population of these villages. Most of the working-age males are permanently employed as hired, unskilled laborers in and around the urban centers of the coastal plain. In some of the villages, in the former Jordanian frontier zone in Samaria, as many as 90 % of the young men (the 16–29 age group) commute daily to work in the urban areas of the lowlands. In recent years, a growing number of young women have been working outside their respective villages in modern urban and rural occupations. This has brought an entirely new phenomenon into the life of the Arab rural population of Samaria. Furthermore, with the disappearance of the border, the

markets of the densely inhabited lowlands have again become accessible to the products of these villages. These markets are not only very close by, but often given much higher returns than the markets to which the products went before 1967. Market gardening and field crops in these villages have therefore been adapted to the demands and tastes of the inhabitants of the coastal plain. Certain products such as oranges which cannot be marketed in the coastal plain because of quality or lack of demand, continue to be sent to the Persian Gulf states.

The fact that working as hired laborers in the lowlands is much more profitable and involves less physical effort than crop raising on poor soils, on the marginal stony lands of many of the highly calcareous slopes of the Samaritan highlands, has led to the abandonment of some of the areas brought under cultivation after 1949 and other scrubby lands. Neglected terraces and plantations (olive, figs) have become a striking part of the landscape of many of these villages. On the other hand, there is noticeable intensification of the cultivation on the better lands with a substantial rise in production. The yields of most vegetables grown in these villages have nearly doubled since 1967 per area unit, as a result of the introduction of modern cultivation methods. Women, children and old men perform a much greater proportion of the farming activities than before, while many of the working age peasants tend to their farms mainly during week-ends, as they are employed elsewhere as laborers during the rest of the week. The income of almost the entire population in the former Jordanian frontier belt has risen very significantly as has the standard of living. This is reflected in the large number of new, more spacious houses which have been built in these villages during the last decade and the pace at which the old nucleated parts are being deserted⁶⁾.

The emigration of working age men has dwindled to a small trickle or ceased, and many of the villagers who moved to the interior of the highlands during 1949–67 returned to their native villages. Thus, the population of the villages which had been on the decrease in the early 1960s has grown by 25–30 % between 1967 (census) and 1977 (estimates)⁷⁾. The age-sex demographic pyramid has now assumed a normal shape for the under 29 age groups, the anomalies persisting mainly for the 29–44 age

6) LIFSHITZ, Y.: Economic Development in Judea and Samaria 1967–73. In: Judea and Samaria, pp.125–135. GROSSMAN, D. and SHMUELI, A., eds., Tel Aviv 1977 (Hebrew).

POHORILES, S.: Development in Agriculture in Judea and Samaria. In: Judea and Samaria, pp. 136–146. GROSSMAN, D. and SHMUELI, A., eds., Tel Aviv 1977 (Hebrew).

7) Based on village note-books and information obtained from village headmen (mukhtar) and school masters; also on the Statistical Quarterly for the Israeli Occupied Territories published by the Israeli Central Bureau of Statistics.

Tab 2

Typical Arab Frontier Village in Samaria:
Clustered and Dispersed Built up Areas / Cultivated Land.

Village	% of clustered buildings	% of clustered buildings	Cultivated land per capita in ha	
	1944 (approx.)	1977 (approx.)	1944	1977
A. Jordanian side of the frontier				
Jalbun	95	50	0.6	0.21
Zabuba	90	50	2.36	0.3
Rumana	90	60	1.52	0.26
Zeita	85	40	0.33	0.14
Shuweika	80	25	0.2	0.16
Irtah	85	40	0.24	0.04
Habla	80	50	1.2	0.19
Budrus	95	80	0.6	0.2
B. Israeli side of the frontier				
Sandala	95	30	1.2	0.4
Umm El Fahm	80	20	0.88	0.23
Arara (+ Ara)	85	15	0.98	0.28
Baq'a El Gharbiya	80	20	0.8	0.19
Tayiba	75	10	0.57	0.12
Kafr qasim	85	15	0.6	0.14

group. The ability of the population of these villages to take advantage of the highly advanced medical services of the urban centers of the lowlands (Israel) has brought the

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death rate down and raised the birth rate. There is, therefore, a substantial rise in the rate of natural increase which reached 3.3 % in 1977.

The new trends and processes of transformation affecting the 1949–67 frontier zone in Samaria, resulting from the removal of this frontier, are still in full progress. It is already apparent that the rural population of the zone is dependent more than even before (especially from an economic point of view and in so far as vital services are concerned) on the urban centers of the densely populated neighboring lowlands. Agriculture is rapidly losing ground as a source of employment and income for a growing majority of the rural population on the western and northern fringes of the Samaritan highlands. Unless the future brings a new economic and/or political upheaval which will arrest or alter the present trends of transformation, most of the Arab villages in the area under discussion will become outlying labor settlements of the coastal plain conurbations. Finally it should be pointed out that, as an administrative boundary within the territories under Israeli rule, the former "Green Line" still exercises functions which are responsible for the persistence of certain differences (mainly in government services and development policies) between the two sides of the former frontier belt. Despite the developments of the last decade there are still very conspicuous differences in landscape and pattern of rural settlement between what were the Jordanian and Israeli parts of the frontier belt prior to 1967.