

Jewish Settlement and Its Economic Impact on the West Bank, 1967–1987

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ABSTRACT: This paper focuses on the process of Jewish settlement in the West Bank and its economic consequences in the period from 1967 to the outbreak of the *Intifada* late in 1987. It attempts to show that this process is the practical application of Israeli objectives which are based on expansion and occupation of neighbouring Arab lands, facilitated by the fashioning of a dual or “bifurcate” economy there.

After the war of June 1967, Israeli occupation authorities started to draw up plans with a view to settling Jews in the West Bank. There has been an increase in the numbers of settlements and settlers, estimated at 122 and 52,000 respectively in 1987. The pattern of settlement distribution is randomly dispersed, although it is concentrated in a region located to the NW of Jerusalem. The settlement began in the Jordan valley and extended gradually westward in the highlands.

Jewish settlement has affected economic development of the West Bank, where there were many constraints on Arab agriculture and industry. Inequality is evident between settlers and Palestinians in an economy that has been structurally bifurcated: although settlers represent about 3% of total population of the West Bank, their economic activity constitutes at least 35% of the GDP of the West Bank.

Introduction

The outbreak of the Palestinian *Intifada* in December 1987 can be regarded as a turning point in a prolonged occupation that has lasted now more than two decades. This paper deals with Israeli settlement in the West Bank in general and its economic repercussions in particular. The two topics are viewed here in geographical perspective as well as in terms of political implications, and their treatment is limited to the period from June 1967 to the eve of the *Intifada*. The paper aims to shed light on the geographical processes. A distinction will be made between (a) the immediate, short-term objectives of the colonization process, reflected in dispersing settlements in various locations and resource allocation to these settlements in order to be able to ensure their viability and (b) the long-term objective of absorbing West Bank lands by weakening of the economic links of the indigenous Palestinian population to its immediate locale. That aim may be the most crucial, since its achievement or failure will determine whether Israel will ultimately annex the West Bank and incorporate it into its territorial sovereignty. At the same time, one can note a case here in which the

local inhabitants of the region are being systematically alienated from the proper use of their regional resources. The apparent goal of such alienation is to prevent the local Palestinian population from forming their own independent state at some future point.

The Arab-Israeli war of 1948 changed the map of British Mandate Palestine. Israel occupied 20,700 km², or 78% of the former area of Palestine. The Hashemite Kingdom of Jordan amalgamated about 5,600 km², or 20.7% of Palestine on the West Bank to the East Bank, and this became known as the West Bank. The remainder of Palestine (Gaza Strip) represented 1.3% of Palestine and was put under Egyptian administration.

The West Bank region was separated from Israel by the armistice demarcation lines, which cut all links connecting it with Israel. It no longer had access to the Mediterranean Sea or to the coastal plain and the Gaza Strip; its only link was with the East Bank of the Jordan.

The Arab-Israeli war of 1967 brought about another change in the map of Palestine, when Israel occupied the West Bank and Gaza Strip, in addition to its occupation of Sinai and the Golan Heights. Since the 1967 war, the demographic, settlement and economic structure of the West Bank region has been considerably altered. Israeli

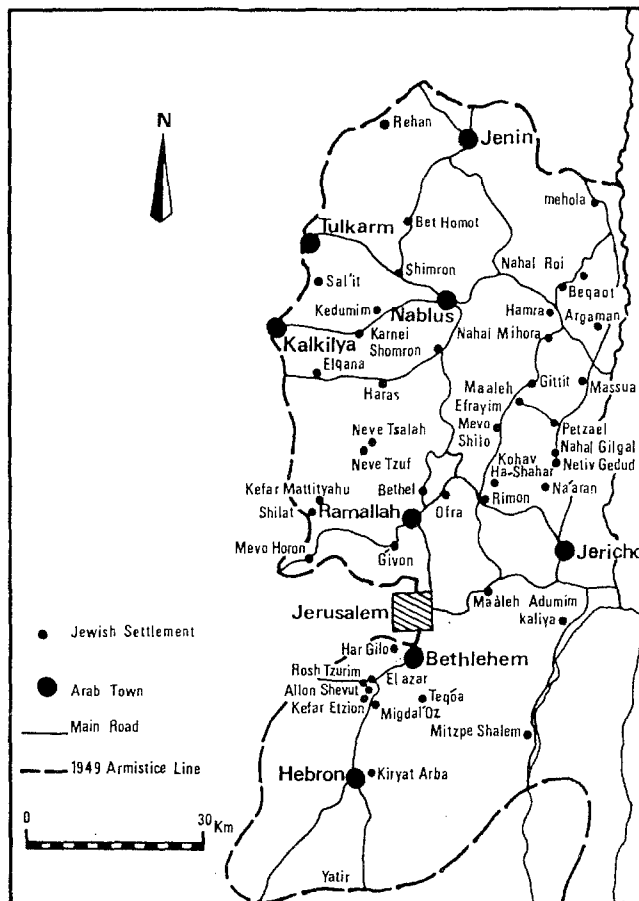


Fig 1 Jewish settlements in West Bank After Efrat (1982)

occupation of this region has encouraged Israeli to settle in it, as a part of Israeli aims to evacuate Arab natives of the West Bank from their homelands and to replace them by Jewish immigrants.

Jewish settlements were gradually established in West Bank after 1967. These were initially defense strongholds and military agricultural settlements. Later, they achieved the status of permanent settlements. Undoubtedly, the question of Jewish settlement in the West Bank is a part of the question of Israeli occupation more generally, which is related to political and military factors. Moreover, this settlement can be considered as a major factor in occupation consequences on the West Bank. The Israeli state was established on a substantial part of the land of Palestine after the 1948 war. Its needs for secure boundaries have led to a policy which is based on Israeli expansion at the expense of its neighbours. This policy has been implemented in the wars and invasions which the area has witnessed over the last forty years. Jewish settlement has always been considered as the practical application of Zionist philosophy in expanding the lands of Israel (Eretz-Israel) and protecting its aims. Civilian settler presence in border areas and along frontiers was regarded as a prime strategy for territorial control (Newman 1989, 215–227).

The motives of Jewish settlement in Palestine generally and in the West Bank in particular are numerous and varied. But these various motives – religious, historical, security, political and economical – together play an important role in promoting the settlement process (Allon 1970, 7; Bach 1978; Orn 1980, 202–212; Newman 1984, 147).

The Jewish Settlement System

The Jewish settlements planted in the West Bank are political in nature, their main object being to obtain a hold on areas which may sometime in the future face being cut off from the territory under Israeli occupation and control.

A quantitative point system was introduced to identify priority areas of settlement. The high-priority areas encompass the central massif of the West Bank in such a way as to encircle the main Arab population concentrations. In this strip, extending along the watershed from Nablus District in the N to Hebron (Al Khalil) District in the S, most of the Palestinians are concentrated, living in urban and rural settlements (Fig 1). The watershed highway is in essence a local Arab road axis. Jewish settlement along this axis will create a mental separation in relation to the mountain massif. Also, it may restrict uncontrolled Arab building sprawl. Israeli planners orientate Jewish settlements in such a way that they can expose Arab areas to be encircled in the first stage of settlement, and then to be penetrated and fragmented in a second stage (Benvenisti 1984, 27, 52).

The Jewish settlement system is composed of numerous internal and external input components which affect decision-making in settlement policy. Among these components are the international attitude and views towards settlement, Arab attitudes outside the Occupied Territories, Palestinians and their resistance to occupation inside the West Bank, security conditions, capital investment, party-political attitudes and economic crises in Israel.

The Jewish settlement plan is based on the work of a team composed of representatives of the Ministries of Defense, Interior, and Housing, and specialized agencies such as the Land Authority, the Electrical Corporation, and Public Works as well as the military government, the civil administration, and the Higher Planning Committee.

Settlement Growth

After the June 1967 war, the Israeli settlement authorities immediately started to draw up plans with a view to settling Jews in the Jordan valley. These plans were predicated on the establishment of a number of agricultural village settlements which would be based on the climatic advantages of the Jordan valley, in addition

to its military status as a cease-fire line with Jordan. It was also necessary to establish a chain of settlements extending over the whole length of the valley escarpment that would constitute a defense barrier parallel to the Jordan river.

This initial phase of Israeli settlement was based on the strategic and political conception embodied in the famous Allon Plan (Fig 2). According to this plan, Allon suggested the annexation of a strip of 10–15 km extending through the Jordan valley to the Dead Sea, plus all the wilderness of Judea and the uninhabited parts of the Hebron mountains. The width of the Jordan valley strip was later enlarged to 20 km from the river to include the E slopes of the Jerusalem mountains. In the Allon Plan, this latter region was seen as providing the basis for a future autonomous Arab enclave within a "secure" West Bank (Newman 1984, 149). By 1971, the number of settlements in the valley had risen to 10. In 1975, two chains of settlement had been established, one in the valley (Ghor) and another on its W escarpment. The Allon Road, a patrol road later paved, marked the W frontier of the settlement area, separating it from the inhabited Arab villages on the desert threshold. Allon's strip was to cover about one third of the West Bank (ca. 1900 km²), including the ranges of mountains to the W of the valley itself (Allon 1976, 38–53; Harris 1978, 309–33).

The settler population grew very slowly during the initial phase of the Allon settlement plan. In 1975, there were approximately 425 families (1,800 persons). By June 1977, there were 23 village sites in the two lines, with a regional services centre at Ma'aleh Efrain (1,000 inhabitants) (Harris 1978, 325). The total population in 1983 was estimated at 700 families (including 200 families in the Ma'aleh Efrain urban centre). The average rate of growth in 1977–1983 was 6.6% per annum, or 33 families a year (excluding East Jerusalem).

The Allon Plan was followed by other settlement plans after the October 1973 war. Up to that war, there were 17 settlements in the West Bank, 13 in the Jordan valley, and 4 in other regions. The Gush Emunim organization, founded in February 1974, put forward a plan for the establishment of some 60 settlements in the central massif and the western foothills of the West Bank, and this plan became the official policy of the World Zionist Organization Department of Settlement after the elections of 1977 which brought the Likud Party to power. Gush Emunim produced an outline plan in which it was proposed to settle a million Jewish inhabitants in the West Bank by the end of the century (Newman 1984, 149).

The Drobles Plan (Fig 3) articulated the settlement strategy of the Likud and Gush Emunim. The settlement policy was defined by Drobles on the basis that settlements should not be isolated, but should be collected in blocks or belts which could serve as security points as well as a reliable barrier against any threat from the Arab eastern front. According to this plan, 12–15 rural

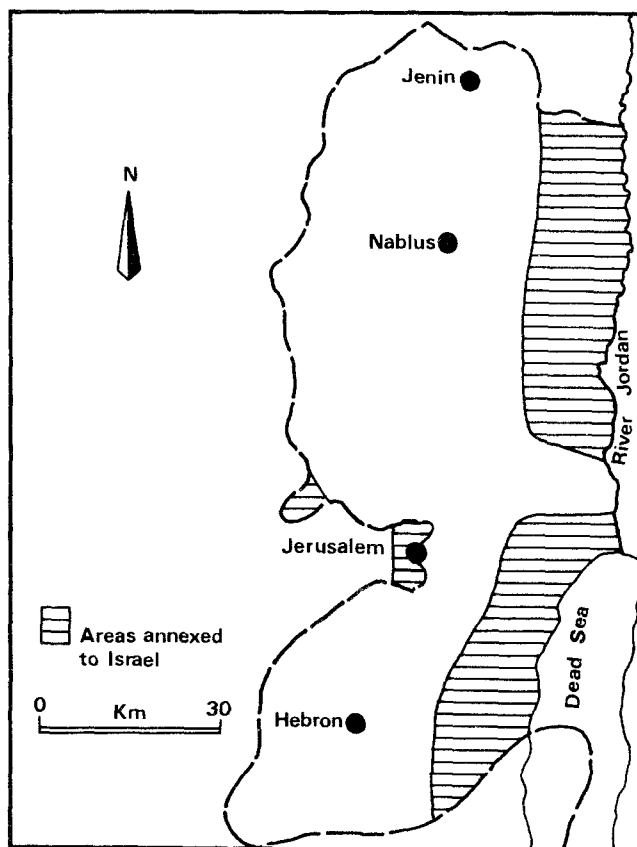


Fig 2 Allon Plan for settlement

and urban settlements were to be built each year during the period (1981–1986), so that 60–75 additional settlements would be established and the Jewish population would reach 100–200 thousand (Drobles 1980).

After the signing of the second disengagement agreement with Egypt, the Israeli government decided to strengthen Jerusalem by establishing a ring of satellite towns within a radius of 15 km around the frontiers of greater Jerusalem, extending from Sur Bahir in the S to Qalandia Airport in the N (Nijim 1984, 264; Benvenisti 1984, 51–54).

There was an increase in the numbers of settlers, but marked by evident variations in their growth rates from one year to the next. Two major phases can be distinguished: the first, from 1968–1977, the period of Labour Party administration, and the second from 1977–1984, the period of the Likud administration. During the first period, the average annual absolute increment was about 770 settlers, while under Likud, it was 5,400 per year. In 1984, for the first time, the growth exceeded 10,000 settlers a year. Between 1982 and 1984, the number of settlers more than doubled. The growth rate of over 50% between 1982 and 1983 slowed to 21.5% between 1984 and 1985 (Benvenisti 1986, 46).

There are different Israeli estimates of the number of settlements. The total was estimated at 122 settlements,

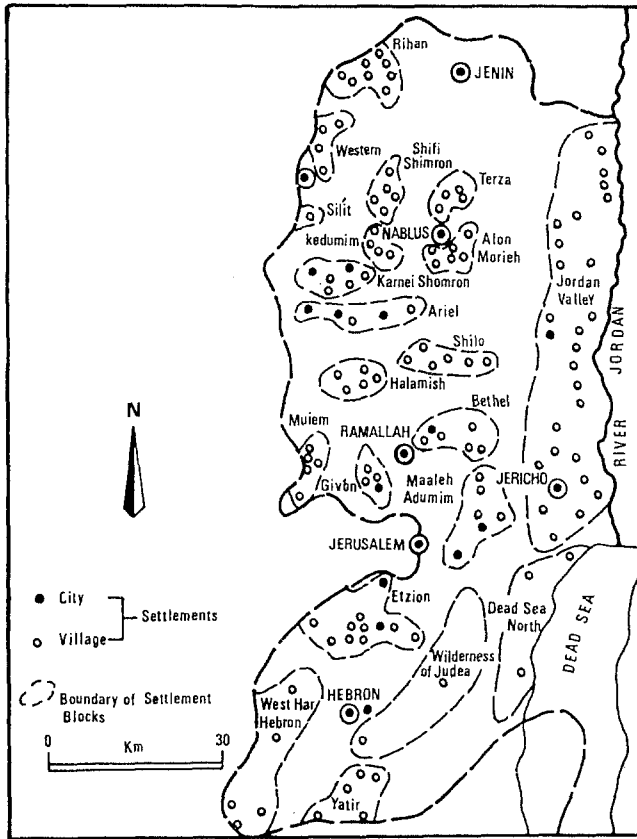


Fig 3 Drobles Plan for settlement (1979–1983)

but the official estimate was 118 settlements up to the end of 1986 (Davar 14 Nov. 1986). Small-size settlements are dominant, as is shown in Tab 1.

From Tab 1, one can infer that more than three-fourths of all settlements have less than 300 settlers. One tenth of them have 1,000 settlers or more.

Settlement Patterns

There are three patterns of settlement. The first is the regional pattern which is found basically in the

Tab 1 Distribution of settlements by size in 1985

Number of settlers	Number of settlements
Up to 100	27
100– 200	39
200– 300	14
300– 400	6
400– 500	3
500–1000	4
1000–2000	6
2000–5000	4
More than 5000	1

Source: Benvensiti 1986.

Jordan valley, and represented by a continuous chain of settlements parallel to the Jordan river. The second pattern is spot settlement, where settlements are established at several points in the West Bank, such as Rehan, Bet Homot, Shomron, Kedumim, Karnei Shomron and Ari'el. The third pattern is urban settlement, represented by the settlements around Jerusalem; this pattern includes new suburbs, rural settlements, and even new towns, in the area extending from the Etzion Block in the S to the Ma'ale Adumim in the E, Har Ba'al Hatzor in the N, and Lower Bet Horon in the W (Efrat 1982, 21–28).

Israeli settlements are officially grouped in two broad categories (excluding paramilitary outposts, which would constitute a third category): urban-suburban and rural-semi-urban. Urban settlements include the following types (excluding East Jerusalem):

1. The city is a strong urban community serving as regional, industrial, service and cultural centre. Its population consists of more than 10,000 families (42,000 persons), and it encompasses an area of 700–1500 ha.

2. The *Kiriya* (town) is an urban centre of 3,000–5,000 families (12,000–20,000 persons) and a subregional service centre, with low-density housing. Its planned area is 250–500 ha, as mentioned in the 100,000 plan of 1983.

3. The *Toshave* (suburb) is a satellite neighbourhood serving as a commuter dormitory with minimal local services but with good access to major metropolitan areas. Its planned area is 50–200 ha (500–2,000 families, or 2,500–8,500 persons), as mentioned in the 100,000 plan of 1983.

Rural-semi-urban settlements also include several types:

1. The *yishuv kehilati* is a non-agricultural cooperative settlement established by the World Zionist Organization, which provides infrastructure housing and basic industry. Clusters of *yishuvim kehilatiim* are planned to form a *kiriya*. The planned population size is 200–300 families (800–1200 persons) on an area of 40–80 ha. This cooperative settlement is affiliated with the Gush Emunim settlement movement (Amana).

2. The agricultural cooperatives are traditional forms of rural settlements (*kibbutz, moshav, shitufi*), all based on agriculture and industry, with on-site production and collective ownership of the means of production. The planned size of settlement is 80–160 families (350–650 persons), for a built-up area similar in size to the *kehilati*. The cultivated area ranges between 300–500 ha.

3. The settlement centre (*mercaz ikhlus*) is an undefined housing estate planned to form the nucleus of a settlement. When sufficient settlers are gathered, they decide on the type of permanent settlement.

In September 1982, there were 18 urban settlements of all types with nearly 3,000 families and 65 rural-semi-urban settlements of all types with about 2,100 families.

Settlement Distribution

In 1986, the number of settlements was estimated at 122 in all of the West Bank. Jerusalem district included 60 settlements, while Nablus and Al Khalil (Hebron) included 46 and 16 settlements respectively.

The Israelis have planned to collect settlements in 22 blocs, each bloc including a group of settlements (Nijim 1984, 262). Although the distribution of settlement pattern takes the shape of blocs or belts, it seems that the settlements have no symmetrical shape, but rather take a random shape. This is due to the fact that there are numerous plans for settlement implemented by different parties and movements. A recent study by Ahmad (1989) used a geographical method whereby he attempted via nearest neighbour analysis to ascertain the pattern of settlement distribution and whether it is dispersed regularly or randomly, according to the following formula (Ambrose 1969; Theakstone 1971; Tidswell 1979; Ahmad (1989).

$$R_n = 2 \bar{d} \sqrt{\frac{n}{a}}$$

Where R_n = neighborhood index.

\bar{d} = distant average between the settlements in the study area

n = number of the settlements in the study area

a = area of the West Bank

If the result of computation is zero, the distribution pattern of settlement will focus around a centre in clusteral shape. But when it is one (1), the pattern shape will be dispersed unsymmetrically, and when it is 2.15, the pattern shape will be dispersed symmetrically.

Applying this formula to the West Bank, Ahmad (1989) found that the result was 1.033 in the West Bank as a whole, 1.05 in Nablus District, 1.15 in Jerusalem District and 0.94 in Al Khalil District. This result means that the pattern shape of settlement distribution is dispersed unsymmetrically.

In order to know the concentration point of settlement, the following formula to determine the mean centre of distribution was applied by Ahmad (1989):

$$\bar{X}C = \frac{\sum (X_i p_i)}{\sum p_i} \text{ and } \bar{Y}C = \frac{\sum (Y_i p_i)}{\sum p_i}$$

Where $\bar{X}C$ = average of (x) gridlines for the square centres in the map

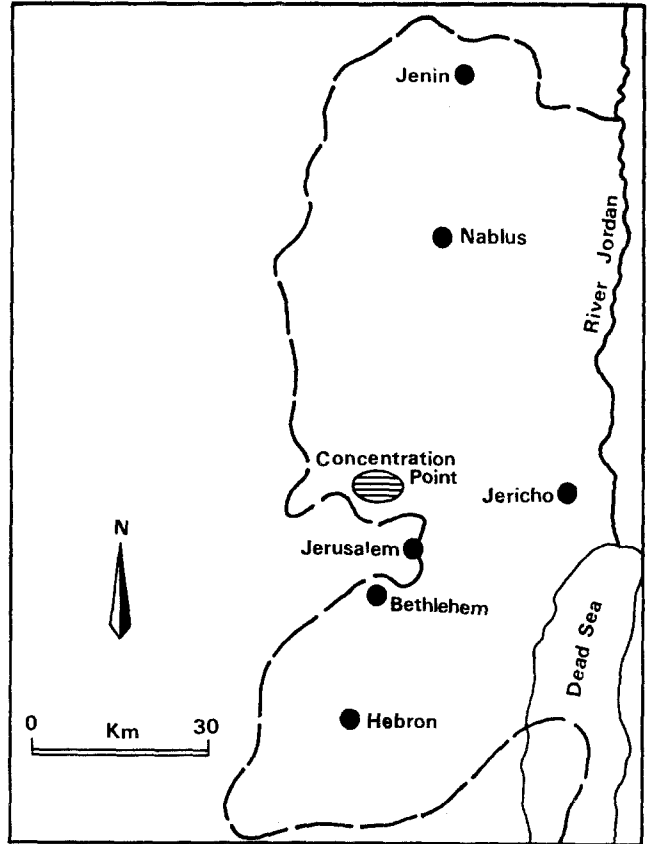


Fig 4 Jewish settlement concentration point After Ahmad (1989)

$\bar{Y}C$ = average of (y) gridlines for the square centres in the map

x_i = (x) gridline of the square centre in the map

y_i = (y) gridline of the square centre in the map

p_i = number of the settlements in each square in the map

Applying this formula to the West Bank, the research shows that (x) value was 4.2, and (y) value was 8.7. This means that settlement is concentrated in a point located to the northwest of Jerusalem (Fig 4).

In order to pursue the trend of settlement extension, a trend surface model was used in accordance with the year of establishment of the settlement and their location during the period (1967–1985). According to the results of trend surface of the first class, this pattern of settlement extension interpreted 7% of total dispersion of (y), which was the year of the settlement’s establishment; it was significant at 99% level. The results revealed that settlement began in the Jordan valley and extended

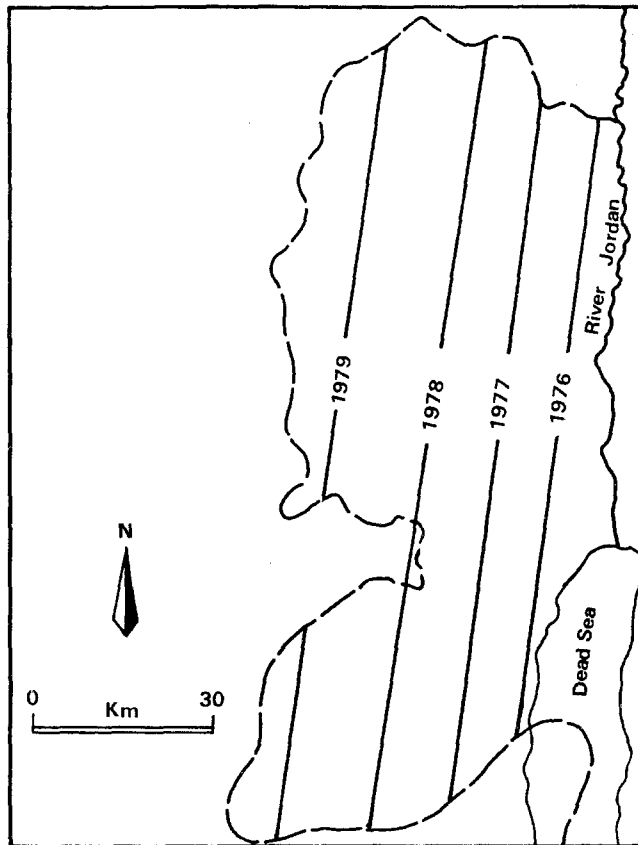


Fig 5 Trend surface for settlement according to the year of establishment
After Ahmad (1989)

gradually towards the W in the massif and along the Green Line (Israel's pre-1967 borders), as shown in Fig 5. This means that settlement was older in the Jordan valley and more recent in the mountains. There were several political, military and economic variables which affected the settlement process and its evolution.

Economic Consequences of Jewish Settlement

Arab sentiment toward the settlements has been clear from the start. Their establishment has created an atmosphere of restlessness and anxiety among the Palestinian inhabitants of the West Bank; increasingly, the Palestinians recognize the settlements as the most threatening consequence of occupation. Whereas the occupation intended to govern, the settlements seek to take over Arab natural resources, and to exploit the economic and human resources of the West Bank.

The settlers are considered a fifth column supporting the Israeli occupation authority in strengthening its control so as to bolster security in the occupied territories. This is emphasized by the fact that Jewish settlers are involved in serious violence against Palestinians in addition to their participation in the struggle against

their present uprising. The settlers committed 1,919 violent acts against Palestinians during the period (1980–1984), 735 against Arab persons and 1,184 against Arab property (Al-Quds, 23 Oct. 1989).

Civilian and military settlements in the West Bank are considered part of Israel's security system. Therefore, they are necessary for Israel's defence, and serve as a means to achieve political ends. Jewish settlement is a part of Zionist strategy in protecting the new occupied lands and encouraging Israel to expand at the expense of Arab lands.

The Gradual Loss of Arab Lands

Land is an important resource in the West Bank; its importance derives from its utilization in agriculture, tourism and industry. The strategy of the Zionists has been to obtain land for settlement either by seizure, expropriation, or by purchase. From the occupation of the West Bank in June 1967 until June 1978, Israel, because of its conquests, regarded itself as the successor of Jordan. On the question of the state ownership of land, (75,000 ha) registered as state land, 50,000 ha not properly registered for ownership under Jordanian law, and 32,024 ha of so-called "abandoned property" were expropriated by the Israeli authorities (Ryan 1974, 15; Abu-Ayyash 1976, 83–108; Nazzal 1980, 113).

In 1985, the total expropriated area was estimated at 284000 ha, or about 52% of the area of the West Bank. Security reasons are often cited for land seizures. Under Military Order (388), the military governor is authorized to declare any area closed, and to prevent any one from entering or leaving it without a permit. If the closed area had crops of fruit-bearing trees, these are defoliated, uprooted, or bulldozed. Another cause of land confiscation is for the "public" benefit – of course, that "public" is in fact the Jewish settler community.

Most of expropriated cultivable lands are private Arab lands transferred to Jewish settlements. Out of an estimated 19,800 ha of cultivable land expropriated by the Israeli for the exclusive use of settlement (up to July 1982), 1092 ha were state lands and 18,630 ha were private lands – i.e., 5% state lands and 95% private (Matar 1984, 127).

Land and other property owned by citizens of the West Bank who left the area in 1967 or before were vested by Order 58 (1967) in the Custodian of Abandoned Property. The Custodian was empowered to manage the property and to lease it. The total area thus seized amounts to 43,000 ha.

Confiscation of Arab property and lands has continued unabated since 1967. Several cases can serve to shed light on this phenomenon. In June-July 1967, 2000 ha of cultivable land belonging to the three villages in the Latrun salient (Beit Nuba, Yalu and Imwas) were seized, and then utilized by the settlers. It should be noted that these villages were demolished during the first

Tab 2
Estimated land areas of West Bank settlements established between May 1981 and July 1982 (excluding East Jerusalem)

Settlements	Total area (approx.) ha	Public and private land (approx.) ha	Previous status of land and village from which it was seized
Highlands:			
<i>Hebron area</i> Five settlements	460	460	Lands seized from villages of Yatta, Fredis, Dura, and Traqumia.
<i>Betlehem area</i> Two settlements	130	130	Lands seized from Rashayda tribe and Ubeidiya Village
<i>Ramallah area</i> Five settlements	245	245	Lands seized from Beitunia, Al Jib, Al Beireh, Jibya, Abud, and Deir Qadis
<i>Tulkarm area</i> Four settlements	310	310	Lands seized from Deir Estya, Jinsafot, Anabta, Sarta, and Haris
<i>Jenin area</i> One settlement	40	40	Lands seized from the village of Tura.
<i>The Jordan valley</i> Three settlements	345	345	Lands seized from Jericho and Tubas.

Source:
Aruri, N.: Occupation Israel over Palestine. London 1984.

few days of the 1967 War. Moreover, the settlers of Argaman settlement have been using the lands of the destroyed Arab village Makhruk (in the Jordan valley) since August 1967. The settlers of Gitit Roi and Migdal Oz cultivated the lands of Akraha, Beit Omar and Tubas beginning in 1972 and 1977 respectively.

Figures during a selected period between May 1981 and July 1982 are revealing: Tab 2.

As some of the above examples show, the threat to Palestinian property rights does not end with the initial establishment of a settlement. As the settlement grows and more settlers are brought in, additional land is expropriated. Every settlement is thus a continuing threat to the surrounding Palestinian villages, and a dynamic of encroaching colonization is involved.

There is a close connection between the expansion of Jewish settlement and expropriation of Arab lands. The results of coefficient correlations between the area of confiscation of Arab lands and the number of settlements are positive and strong. They are evident during the period (1979–1982), and the value of coefficient correlation was 0.73 in all parts of the West Bank. In the Jerusalem area, the value of (R) was 0.76, while it was 0.77 in the Ramallah-Al Beereh area, 0.78 in the Hebron-Bethlehem area, 0.76 in the Nablus-Jenin-Tulkarim area, and 0.56 in the Jordan valley. There was probability at 99% significance level that this relationship was not accidental (Saleh 1990).

The objectives of the Israeli policy seem to have been approached within the framework of the core-periphery model, i.e., Israel with the Tel Aviv metropolitan area as the core, and the West Bank as a marginal periphery. It aims at realizing the following goals:

1. Exploiting the basic economic sectors of the West Bank, mainly agriculture, industry, mining and tourism.

2. Uprooting and relocating the Palestinians into new areas outside their land.

3. Developing and expanding the transportation network so that it can enable the Zionist Organization to direct the flow of materials from the occupied West Bank toward the Israeli core regions (Abu-Ayyash 1976, 107).

Water Exploitation

Throughout history, the West Bank mountainous region has suffered from a lack of flowing water. A relatively small number of wells and springs have been utilized in the central mountains. The rainfall of the highlands drain eastward feeding the springs of the Jordan valley, and westward, feeding the groundwater of the coastal plains in Israel.

The net annual amount of water resources of the West Bank is estimated at 800 mm³ on average. In 1982, the Arab inhabitants consumed about 102.5 mm³ of which 87.5 mm³ was consumed in irrigation. In 1988, the Palestinian consumption of water of their lands was estimated at 115 mm³, of which 100 mm³ was consumed in irrigation. The Jewish settlers' consumption from the water of the West Bank was estimated at 60 mm³ (Saleh 1988, 59). In 1978, the total number of artesian wells in the West Bank was 331, of which 17 were drilled by the Israeli Water Company (Mekorot) in the Jordan valley to serve Israeli settlements in that area. The total volume of water discharged from 314 Arab wells amounted to 33 mm³, whereas 17 Israeli well in the Jordan Valley had an output of 14.1 mm³ in the same season.

In 1988, the total number of Jewish settler wells in the West Bank was estimated at 130 wells. There was no

balance between the percentage of settlers and their wells when compared with the total number of population and wells in the West Bank. The settlers have represented about 3% of the West Bank population, while their wells have represented more than 30% of total wells in the West Bank, and their consumption was estimated at 52% of total water consumption, a decidedly lopsided situation in water resource utilization, reflective of a dual or bifurcated structuring of the economy.

Arab agriculture in the West Bank is dependent on relatively low and erratic rainfall levels. Therefore, any development of agriculture must be dependent on irrigation, accounting for some 4% of total land under cultivation. Irrigated land is mostly found in the Jordan valley and in pockets in the Jenin and Tulkarm areas. The Arab village well provides water for domestic purposes and for irrigation.

Israeli water policies have generally blocked the development of Arab water resources (Davies 1980, 6–15; Rowley 1990, 39–52). In the first place, the Israelis have no interest in developing Palestinian agriculture that might compete too much with their own. Second, Israel itself has a very high rate of water use, particularly for its heavily irrigated agricultural sector, which used up some 75% of the total volume of water consumed each year. Consequently, strict controls have been placed on water use by Arab citizens. They suffer from water shortages in the dry summer months every year. Wells are metered and those who pump over the stated limit are penalized. The authorities also generally forbid the drilling of new wells.

Jewish settlements, on the contrary, are not restricted in their use of water, and are permitted to drill deep wells. For instance, the settlers of the Jordan valley drilled about 20 wells, ranging in depth from 400–700 m. This appears to have led in several cases to the drying up or reduction in flow of shallower neighbouring Arab wells (Saleh 1988, 59). Among the best documented cases were those of Al-Auja, Jericho, and Bardala wells in the Jordan valley.

The settlers have drilled deep-bore wells and installed powerful pumps in all of the West Bank, particularly in the Jordan valley, where the settlements are completely dependent on the groundwater for their domestic and irrigation purposes. The twenty deep-bore holes (Jewish wells) have pumped some 15–17 mm³ of water per year from the Jordan valley. The rate of pumping by a newly installed high-capacity pump exceeds the rate at which water has entered. The level of water in the well drops and the surrounding water table is lowered in the shape of a conical surface, referred to as the cone of depression, the height of which is the drawdown. The extent of the cone of depression can extend as far as 16 km from the pumped well. Where a number of these deep-pumped wells are working, their intersecting cones of depression produce a general lowering of the water table – and the traditional wells are left literally high and dry (Rowley 1986, 356–359).

A number of these wells have been drilled in close proximity to local Arab springs. These include two wells dug in the Jericho area above Ain es-Sultan spring, three wells drilled on the site of Al-Auja spring, two on the site of the Fasail spring, five in the Wadi Fara basin and two in the Bardala basin. Modern Israeli water schemes on the West Bank caused a serious depletion of, and even drying up of Arab springs and wells, resulting in serious damage to irrigated agriculture, which ordinarily utilized these waters (Ron 1986, 360–369j).

The deleterious impact of these practices has already been felt in Jericho, where the salinity of the water being pumped from pre-1967 Arab wells has increased noticeably in the last several years. The outflow of the Al-Auja spring, which averaged 11 mm³ per year, dried up in the summer of 1979; hydrologists link this to the three Israeli wells dug on the site of Al-Auja. Farmers of Al-Auja village lost all their crops – an estimated loss of \$3 million – and were forced to migrate from their village, which had a population of 500 in 1980 (Graham-Brown 1984, 177–179).

The Israeli authorities have placed a ban, with a few exceptions, on the drilling of new Arab wells for irrigation purposes – the aim is to conserve the groundwater aquifers of the West Bank for the interest of settlers on the one hand, and to supplement groundwater aquifers of the coastal plain in Israel on the other. It should be noted that the coastal water table is now in danger of salinization from heavy use by the Israelis (Schwarz 1982, 92–95), and almost one third of Israel's present water resources are derived from groundwater in an aquifer lying under the W slopes of the West Bank. This clearly makes control over West Bank resources crucial – not just to prevent the Palestinians from exploiting their water resources freely, but also to meet both settler and Israeli water needs.

The Impact on Arab Agriculture

Agriculture was the mainstay of the West Bank up to 1967. The authorities of occupation have implemented an agricultural policy which was based on encouraging agriculture among settlers and neglecting Palestinian agriculture (Kahan 1983). The first and most devastating change has been the closing off and expropriation of large tracts of Arab lands either for settlement or for military purposes. At the present time, about half of the land area of the West Bank is inaccessible to the Arab citizens. Of this area, the Arab cultivated land actually taken over is substantially larger than the Israelis formally claim.

Expropriation has generally been carried out by the army, which simply closes off Arab cultivated lands, either for its own security purposes or for subsequent conversion to a civilian settlement. On occasion, when farmers have refused to accept the closure and have continued to cultivate the land, strongarm methods have

been adopted. For example, in one instance in 1978, farmers from the village of Akraba in the central hills who persisted in cultivating an area closed off by the Israeli army had their crops sprayed with defoliants. There were a number of incidents in which settlers attacked Arab cultivated lands, either burning the crops, or defoliating hundreds of hectares of orange and olive groves in the Jordan valley and hill region.

Not only have cultivated lands planted with olive or fruit trees been affected by sealing off, but grazing pastures on hill slopes have been also exposed to expropriation. This procedure has reduced the area available for grazing, and areas remaining for livestock became overcrowded and were endangered by the risk of erosion (Graham-Brown 1984, 170–172).

The Israeli authorities have implemented an agricultural policy to put the Arab farmers at a serious disadvantage. It aims at weakening the ties between farmers and their agricultural lands. At first, this had the effect of inducing farmers who had been working marginal land to abandon it for better wages in Jewish settlements. Then it encouraged those farmers growing grains, olives, and other dry farming crops, and who needed more labour than their families could provide, to give up rather than accept the very low returns, a market in which the fast-rising cost of labour was an important component.

Arab farmers have not been allowed to cultivate the crops they want and to consume the amount of irrigation water they need. On the contrary, the settlers have been free to choose the suitable cropping pattern, and to consume the needed amount of irrigation water. Moreover, they have enjoyed incentives, encouragement and financial credits which led to the decrease of costs. Consequently, they have succeeded in filling the West Bank markets with low priced crops, compared with the relatively high prices of Arab crops. On the other hand, many constraints are placed on Arab crop marketing: for example, the authorities force the farmers to export their agricultural production, especially citrus fruits, through Jewish corporations, and they are also compelled to pay high taxes.

Under such conditions, the West Bank was unable to successfully compete with the Israeli economy. Statistics indicate that the West Bank had become Israel's second largest export market after the United States. However, that picture has been totally altered after 1987 as a result of the *Intifada*, Arab agriculture would seem to be in overall decline from its position of relative pre-1967 importance. Gross domestic product from agriculture fell from 36.4% in 1969 to 30% in 1985. Employment in agriculture has also declined dramatically, from 46% of the work force employed in 1969, to 27% in 1985 (Seiger 1988, 2). The Israeli occupation has been responsible for the deterioration in Arab agriculture. Arab farmers have increasingly fallowed their land, and totally neglected the maintenance of their terraces. Caught up in a process of induced "proletarianization", they have sought

employment in other sectors either in Israel or in settlements inside the West Bank.

Problems of Arab Industry

The West Bank is poor in natural resources and rich in manpower; for that reason, industry is the sector which can absorb large numbers of inhabitants. But the occupation has not brought about such an absorption in a developing Arab industrial sector. Like the situation described earlier for agriculture, Arab industry has encountered many impediments and constraints deriving from policies of the occupying authorities – who have encouraged industry solely in the Jewish settlements.

A major constraint on the development of Arab industry has been the lack of substantial capital investment. The size of industrial establishments is still small. In contrast, within the framework of developmental dualism, the Israeli settlers have received favoured treatment over their Arab counterparts. The tariff walls set up by Israel for the protection of its own industries were applied to the settler industrial sector, but Arab industry has not been given the opportunities made available to settlers to exploit that protection. The Arab entrepreneur is denied the grants, loans, and other incentives available to the settlers (van Arkadie 1977, 103–129).

The contribution of Arab industry as percent of GDP in the West Bank has remained virtually stagnant: it was 6.6% in 1965, and 6% in 1975, 4.7% in 1977, and 6.7% in 1980. Employment in industry has been estimated at 15% of the total local work force. A few major local Arab firms have been able to surmount these difficulties and flourish. Khouja and Sadler mentioned that there were only seven Arab firms in the West Bank which employ over 100 persons: Jordan Vegetable Oils, Silvana Chocolates, Malhoes Plastics, Jordan Plastics, Wahbe for sewing work, Jerusalem Cigarettes, and Jerusalem Electric Corporation.

Moreover, there are some small Arab firms where demand by Israelis and Jewish settlers for their products has increased. The most obvious examples are in building materials, carpentry, and furniture. Another industrial activity which has expanded on the basis of links with the Israeli and settlement markets is clothing. The Arab food processing industry suffers from competition from foods produced in the Israeli and settler economy (Graham-Brown 1984, 195–196).

In fact, all Arab industrial products that enjoy a favourable market inside Israel and the settlements are linked with Israeli corporations. Some of these corporations supply Arab clothing firms with spinning and other raw materials, and guarantee to market the textiles and clothes in Israel and settlements. Two major characteristics define the economic relationship that has developed between Israel and the West Bank – the growth of a market for local labour in Israeli settlements and the growth of a market for Jewish commodities in the West

Industrial settlement	Location	Area (hectares)
Sheiked	District of Nablus	4
Barqan	District of Nablus	30
Ma'ale' Ephraim	West Escarpment of the Jordan valley	7
Qarne' Shomron	District of Nablus	15
Ma'ale' Edomin	District of Jerusalem	65
Qiryat Arba'	District of Hebron	5
Total		126

Tab 3
Jewish industrial establishments in
the West Bank up to 1983

Source:
Benvenisti, M. 1984

Bank (van Arkadie 1977, 117–196). Significantly, since 1988 and the deepening *Intifada*, there has been an evolving, long-term boycott of various such Israeli-made products by the Palestinian population.

The number of industrial establishments in the Jewish settlements of the West Bank has increased during the 1970s and 1980s. In 1983, there were six industrial establishments erected on an area of 125 ha distributed in settlements as stated in Tab 3.

There were 46 small industrial establishments in the settlements up to 1985; these establishments benefited from the subsidy of \$ 20,000 each from the Zionist Organization. The plan of 100,000 settlers aimed at establishing seven industrial estates on an area of 1375 ha (Benvenisti 1986, 51–57). In 2010, the projected area of industrial zones in the settlements will be some 1500 ha, covering all parts of the West Bank highlands (Benvenisti 1984, 17).

These industrial establishments have attracted large numbers of Arab workers who abandoned agriculture or who were graduates from the West Bank Arab universities.

The Arab Labour Force

Palestinians have an abundance of semi-skilled and trained manpower, including large numbers of technicians and executives who have done university studies. The ratio of higher level manpower and the ratio of present Palestinian university students to the total Palestinian population is higher than the ratio for any other

Arab country. Skilled workers in industry, mining, building, transport and other trades were estimated at 24% of the total labour force in the occupied territories, whereas unskilled workers in these sectors were estimated at 21% (Harb 1980, 96).

Unemployment or underemployed labour has attracted thousands of Arabs to work inside Israel and settlements of the West Bank. The total number of employed persons who work in Israel and settlements has risen from around 12.8% of total labour force in the West Bank in 1970 to about 30% in 1980. In addition to unemployment, the differential wages between the Jewish economy and the Arab job market have proved an attraction luring Arab workers to jobs in Israel and the settlements. The majority of jobs in question – unskilled construction labour, agricultural work, and service jobs such as cleaning, working in restaurants, garbage disposal and so on – do not present any real threat to the wage structure of organized labour. The Palestinian workers are concentrated at the lower end of the Israeli wage scale without the same income growth possibilities (van Arkadie 1977, 117).

Tab 4 shows a clear pattern where Arab workers are permitted to work only at physically hard labour, while the technical jobs are monopolized by Jewish workers (Grossman 1986, 61). The educated or skilled Arabs are not accepted for work in the technical factories, even if they are trained technicians.

Israeli policy concerning the labour force in the occupied territories generally and in the West Bank especially, is based on converting Arab workers from depending on their local resources to depending on the Jewish

Name of factory	Name of settlement	Kind of industry	Number of workers	
			Arabs	Jews
Aderit	Qarne' Shomron	Textiles	160	14
Israfut	Qarne' Shomron	Printing	10	60
Dokerin	Qarne' Shomron	Electronics	–	34
Ghanot	Enyaf	Electronics	–	12
D. J. M.	Ari'el	Metals	2	30
T.D.S.H.	Ari'el	Electronics	2	15
Shehqim	Ari'el	Metallic Pumps	7	1
Ya'ir Te'iziot	Qedomi	Metallic Uplifts	–	5
Rizef Shomeron	Qedomim	Paper	–	3

Tab 4
Number of Arab and Jewish
workers in some of the Jewish
settlements in the Nablus area

Source:
Grossman, D. 1986.

machines for their livelihood. Moreover, it has aimed at weakening the web of ties between the Arab citizenry and its land and resources, while strengthening their contacts with the Israeli and settler economy, as though it were their principle source of survival. The withdrawal of labour from the West Bank into Israel and into settlements has had immediate negative consequences for the local economy. The process is a form of alienation and de-development within the framework of economic "dual sectorism".

This policy succeeded in bringing about a substantial reduction in the number of Arab workers in the sector of agriculture in the West Bank up to the beginning of the Arab uprising at the end of 1987: for example, the percentage of workers in agriculture decreased from 42.5% of the total labour force in the West Bank to 27.3% in 1985. At the same time, the percentage of Arab workers in the building and construction sector rose by nearly half, from 8.4% in 1970 to 12.4% in 1985. The total number of Arab workers in Israel and settlements increased from 40,600 persons in 1980 to 47,500 in 1985 (State of Israel 1986, 705). Most of these workers had come from the sector of agriculture.

Conclusion

A speech made by Zippori, former Israeli minister of energy, on October 10, 1982, can be cited to clarify plans concerning settlements in the West Bank advocated by Israeli politicians in the "national" camp around the center-right Likud bloc, even today. At that time, Zippori said: "The continuation of settlement is the backbone of the Zionist movement in the West Bank, and it is the only means to defeat any peace initiative which is intended to bring foreign rule to Judea and Samaria The presence of an Arab majority in the West Bank should not prevent the Israeli authorities from accelerating the settlement process in the occupied territories".

Though this view of Jewish settlement as colonization was articulated by a Likud minister, that policy has been supported in virtually equal measure by Labor-led governments as well during the first decade of the occupation, and is reflected in the short-term objectives of colonization: namely dispersion of settlements for "strategic" reasons and resource allocation to such settlements to ensure their viability. The longer-term objective remains absorption of West Bank lands by a process aimed at weakening the economic links of the indigenous Palestinian population to its locale and alienating them from proper use of regional resources. As has been perceptively stressed, "The best ally of Israel's annexationist program is talk about talk, and negotiating about negotiating. When the day comes for the actual drawing of the lines on a map, if that day comes, the present will start with Israel's latest colonial settlement" (Nijim 1984, 266).

Jewish settlement has affected economic development of the West Bank, where there are many constraints on Arab agriculture, tourism and industry. Lopsided development and inequality is highly evident in the dual or "bifurcate" economy that has developed in the 20 years of occupation: though settlers represent about 3% of the total population of the West Bank, their economic activity constitutes at least 35% of the GDP of the West Bank. The Arab economy in the West Bank has been affected by competition from settlers on the one hand, and by its connection with the Israeli economy on the other hand. The difficult conditions have exacerbated Arab hatred of and resistance to the occupation. This has eventuated in the current uprising, which shows no signs of abating.

The *Intifada* has come like an earthquake to the colonization policy of the past two decades, and facts that were thought "irreversible" regarding Israeli control of land and other resources in the West Bank now appear more questionable (Falah 1990) to Israeli planners and annexationists.

References

- Abu-Ayyash, A.: Israeli Regional Planning in the Occupied Territories. *Journal of Palestine Studies* 5, 3-4, 83-108 (1976)
- Ahmad, S.: The Geographical Basis for the Zionist Settlement in the West Bank (1967-1985). Unpublished M.A. thesis, University of Jordan (in Arabic), 1989.
- Allon, Y.: The Making of Israel's Army. Bantam, New York, 7 (1970)
- Allon, Y.: Israel - the Case for Defensible Borders. *Foreign Affairs* 55, 1, 38-53 (1976)
- Al-Quds (newspaper), 142, Oct. 23, 1989.
- Amrose, P.: Analytical Human Geography. Longman, London 1969.
- Bach, G.: in *Ma'ariv*, Oct. 8, 1978.
- Benvenisti, M.: The West Bank Data Project. American Enterprise Institute for Public Policy Research, Washington 27, 52, 1984.
- Benvenisti, M.: The West Bank Data Base Project, 1986 Report: Demographic, Economic, Legal, Social and Political Development in the West Bank. American Enterprise, Jerusalem, 46, 1986.
- Davar (Hebrew daily), 14 Nov. 1986.
- Davis, U.; Maks, A. E. L.; Richardson: Israel's Water Policies. *Journal of Palestine Studies* IX, 2, 3-31 (1980)
- Drobes, M.: Settlement in Judaea and Samaria: Strategy, Policy, Plans (in Hebrew). World Zionist Organization, Settlement Division, Jerusalem 1980.

- Efrat, E.: Spatial Patterns of Jewish and Arab Settlements in Judea and Samaria. In: Elazar, D. J. (ed.), *Judea, Samaria and Gaza: Views on the Present and Future*. American Enterprise Institute Studies in Foreign Policy, Washington, 21–28, 1982.
- Falah, G.: The Geography of Intifadah and the Making of the New State of Palestine. Paper presented at the Association of American Geographers Annual Meeting, Toronto/Ontario, 19–22 April 1990.
- Graham-Brown, S.: Economic Consequences of the Occupation. In: Aruri, N. (ed.), *Occupation – Israel over Palestine*. Zed, London 1984.
- Grossman, D.: Jewish and Arab Settlement in the Tulkarm Sub-district. The West Bank Data Project. *Jerusalem Post* 61 (1986)
- Harb, G.: Labour and Manpower. In: Nakhleh, E. A. (ed.), *A Palestinian Agenda for the West Bank and Gaza*. American Enterprise Institute Studies in Foreign Policy, Washington, 96, 1980.
- Harris, W. W.: War and Settlement Change: the Golan Heights and the Jordan Rift, 1967–77. *Transactions, Institute of British Geographers* 3, 1, 309–330 (1978)
- Kahan, D.: Agriculture and Water in the West Bank and Gaza. The West Bank Data Project, Jerusalem 1983.
- Matar, I.: Israeli Settlements and Palestinian Rights. In: Aruri, N. (ed.), *Occupation – Israel over Palestine*. Zed, London 1984.
- Nazzal, N.: Land Tenure, the Settlements and Peace. In: Nakhleh, E. A. (ed.), *A Palestinian Agenda for the West Bank and Gaza*. American Enterprise Institute Studies in Foreign Policy, Washington 1980.
- Newman, D.: Ideological and political influences on Israeli rural colonization. *The West Bank and Galilee Mountains*. *Canadian Geographer* 28, 2, 147 (1984)
- Nijim, B. K.: Israeli Jewish Settlements in the West Bank, 1967–1980. *Asian Profile* 12, 3, 264 (1984)
- Orn, El Hanan: The role of settlement and its security goals in security of Israel during the eighties. *Institute of Palestinian Studies*, Beirut 1980.
- Ron, Z. Y. D.: Ancient and Modern Developments of Water Resources in the Holy Land and the Arab-Israeli Conflict – a Reply. *Transactions, Institute of British Geographers N.S.* 11, 360–369 (1986)
- Rowley, G.: Irrigation Systems in the Holy land. *Transactions, Institute of British Geographers N.S.* 11, 356–359 (1986)
- Rowley, G.: The West Bank: Native Resource Systems and Competition. *Political Geography Quarterly* 9, 1, 39–52 (1990)
- Ryan, S.: Israeli Economic Policy in the Occupied Territories. *Merip Reports*, 24, 15 (1974)
- Saleh, H. A. K.: Arab-Israeli War on Water. *Arab Affairs* 55, 59 (1988)
- Saleh, H. A. K.: The Demographic Setting of Arab Palestinians. In: *Palestinian Encyclopedia (in Arabic)*. 2nd div. Vol. 1, Beirut 1990.
- Schwarz, J.: Water Resources in Judaea, Samaria and the Gaza Strip. In: Elazar, D. J. (ed.), *Judea, Samaria and Gaza*. American Enterprise Institute Studies in Foreign Policy, Washington 1982.
- Seiger, D.: Israel and the Economy of the Occupied Territories, Report No. 3291. Darel Jalil Translation, Jerusalem 2, 1988.
- State of Israel, Israel Central Bureau of Statistics 705, 1986.
- Theakstone, W. H.: *The Analysis of Geography Data*. Heinmann, London 1971.
- Tidswell, V.: *Pattern and Process in Human Geography*. University Tutorial Press, London 1979.
- Van Arkadie, B.: The Impact of the Israeli Occupation on the Economics of the West Bank and Gaza. *Journal of Palestine Studies* 6, 2, 103–129 (1977)

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