

# “Making the Desert Bloom” A Myth Examined

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The country [Palestine] was mostly an empty desert, with only a few islands of Arab settlement; and Israel's cultivable land today was indeed redeemed from swamp and wilderness.

*Shimon Peres*, (a former Israeli Minister of Information)<sup>1</sup>

It was only after the Zionists “made the desert bloom” that “they [the Palestinians] became interested in taking it from us.”

*Levi Eshkol* (a former Prime Minister of Israel)<sup>2</sup>

A central theme of Zionism has always been that the Jewish people could regain their dignity, after centuries of restriction to urban occupations, only by a return to agricultural labour. In their enthusiasm for this ideal, Zionists have displayed an understandable tendency to overstate the extent of their achievements. There have, however, been other, less honourable, reasons for such exaggeration. During the Mandate the Zionists' overriding concern was to ensure unhindered Jewish immigration to Palestine. To this end, they attempted to convince world opinion that the country was a virtually uninhabited desert – a land without people for a people without a land – in which Jewish immigrants could settle without prejudice to anybody's interests. At the same time, to those who knew that Palestine was already inhabited by Arabs, the Zionists emphasized the technical superiority of their agriculture to that of the native farmers. The

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<sup>1</sup> Shimon Peres, *David's Sling: The Arming of Israel* (London: Weidenfeld and Nicolson, 1970), p. 249.

<sup>2</sup> Levi Eshkol, *Jerusalem Post*, February 17, 1969.

latter, it was argued, would benefit greatly from the adoption of modern farming methods learned from the Jewish immigrants.

Since the establishment of Israel, Zionists have most frequently used the contention that they have “made the desert bloom” to justify the establishment of the State of Israel in Palestine in 1947-48. On the one hand, the extent of the catastrophe suffered by the Palestinians is belittled by repetition of the old assertion that the country had been an almost unpopulated desert before the Zionists’ arrival. On the other, Zionists have taken their argument about the superiority of their own, to Palestinian, agriculture one step further and contend that they have a stronger claim to sovereignty over the country because they have exploited its agricultural potential more efficiently than the Palestinians could have done. Whether or not Israel’s agriculture is more advanced than the Palestinians’ might have been had they not been dispossessed, it is an astonishing assertion that sovereignty over a territory should belong to the people best able to develop its resources. One wonders what the state of the world might be today if this principle were adopted by the superpowers as a basis for their foreign policies.

Despite their inaccuracy, repetition of statements such as those quoted above by Peres and Eshkol has resulted in a widespread belief that Palestine really was a barren wasteland which the Zionists have transformed into a Garden of Eden. What are the facts?

### 1. WAS PALESTINE A DESERT?

The term “desert” is used by geographers with two closely related senses. First, it describes a type of *climate*, characterized by extreme aridity. In its second sense, the word is used to denote a type of *natural region* where, because of aridity, the area under cultivation is extremely limited and the rural population density very low, and where natural vegetation is sparse or absent.

Climatologists have devised a number of climatic classification schemes but in none does the climate of Palestine as a whole fall into the “desert” category. Almost all of the northern half of the country experiences what is termed a “Mediterranean” climate, with arid summers but abundant rainfall in winter. Precipitation generally increases from south to north and from east to west, and is usually greater in the highlands than in the plains. The abundance of precipitation in the north is exemplified by the average annual rainfall figures for Tel Aviv, Nazareth and Jerusalem, respectively 539 mm., 639 mm. and 486 mm.

The Negev desert, by contrast, which constitutes the southern half of Palestine, does experience a true desert climate, although again the rainfall

generally increases northwards and westwards and tends to be greater in the uplands than in the plains. Average annual rainfall at Eilat, for example, at the head of the Gulf of Aqaba, is a mere 25 mm. while Beersheba, in the northern Negev, receives an average of 204 mm. of rain per annum. The dividing line between the areas of Mediterranean and desert climate in Palestine cannot be defined precisely. Climatologists generally agree that a good working definition is provided by a line joining Beersheba with El Arish on the coast of Sinai.

A second, but limited, area of true desert climate does extend into northern Palestine along the Jordan Valley, which lies in the "rain shadow" of the highlands of Judea and Samaria. Jericho, for example, just north of the Dead Sea, receives an annual average of only 143 mm. of rain.

In the light of these climatological facts, it is not surprising that most of the northern half of Palestine has been cultivated, and has supported agricultural populations, for centuries. As the Ottoman Empire declined, however, Palestine, together with the rest of the Middle East and North Africa, witnessed a progressive contraction of its cultivated area, with accompanying abandonment of villages and encroachments by nomads. Responsibility can hardly be placed at the door of the Palestinian farmers. The root causes were the iniquitous taxation and inept administration with which they were burdened. From the accounts of travellers in the eighteenth and nineteenth centuries, "it is clear that settled life had contracted into the hills, where a largely subsistence economy based on cereal-growing was maintained. The plains were generally empty and left as grazing to the nomadic tribes which had penetrated from the east during the seventeenth and early eighteenth centuries. Neglect of springs and streams led to swamp development and its expansion in several areas, notably the Hula Valley."<sup>3</sup>

Already, however, change was under way. Europe's demand for food and raw materials was rising as it industrialized and its population increased. During the Egyptian occupation of Palestine, from 1831-1840, the country witnessed a much-needed period of effective administration. Subsequently, when the Ottomans had reestablished their authority, they reformed their own local government system. Meanwhile, active steps were taken to control the Bedouin, who were either assisted to settle or were forced into topographically and climatically difficult districts. At the same time, communications were being improved. However slow and sporadic it

<sup>3</sup> Peter Beaumont, Gerald H. Blake and J. Malcolm Wagstaff, *The Middle East: A Geographical Study* (London: John Wiley and Sons, 1976), p. 121.

may have been, the process of reoccupation of the formerly cultivated areas and abandoned villages was already well under way during the latter half of the nineteenth century, *before* the advent of large-scale Jewish immigration. As Beaumont *et. al.* put it, “in the history of landscape evolution, the period since the end of the First World War may be visualized largely as one in which previous developments continued, but at an accelerating pace.”<sup>4</sup>

When Britain received the Mandate for Palestine most of the cultivable land was already under cultivation and the land question became such a bitterly contentious issue because, under Article 6 of the Mandate, Britain was required to “encourage... close settlement by Jews on the land” while at the same time “ensuring that the rights and position of other sections of the population are not prejudiced.” It rapidly became clear that these two requirements were incompatible; a succession of Royal Commissions concluded that land sales to Jews were a major source of Arab discontent.

Land purchased by the Jewish National Fund, the major Zionist land acquisition agency, was exclusively for settlement by Jews and could not be leased or resold to Arabs, who could not even expect to be employed on it. In many cases such land had formerly been cultivated by Arab tenant farmers who, after the change of ownership, found themselves landless. With the Arab rural population growing rapidly, “land hunger” soon developed among the Arabs and was seriously exacerbated by continued Zionist land purchases. The Peel Commission noted that “the evidence we received from government officers established the fact that up to 1930 or 1931 there was land available for displaced tenants, but that from 1932 onwards it has been extremely difficult for such people to find land.”<sup>5</sup>

Just how much land was available for Jewish immigrants became a major issue. The Shaw Commission, reporting in 1930, concluded: “The plain facts of the case are that there is no further land available which can be occupied by new immigrants without displacing the present population.”<sup>6</sup> In the same year a comprehensive study of the agricultural potential of Palestine was undertaken by Sir John Hope Simpson. He reported: “It has emerged quite definitely that there is at the present time and with the present methods of Arab cultivation no margin of land available for agricultural settlement by new immigrants, with the exception of such undeveloped lands as the various Jewish agencies hold in reserve.”<sup>7</sup>

<sup>4</sup> *Ibid.*, p. 124.

<sup>5</sup> *Palestine Royal Commission Report*, July 1937, Cmd. 5479, p. 178.

<sup>6</sup> *Ibid.*, p. 176.

<sup>7</sup> Frances Newton, *Fifty Years in Palestine* (Wrothan: Coldharbour Press Limited, 1948), p. 253.

Much argument surrounded the definition of "cultivable" land. The government of Palestine defined "cultivable" land as "land which is actually under cultivation, or which can be brought under cultivation by the application of the labour and resources of the average Palestinian cultivator."<sup>8</sup> The government calculated that of Palestine's total land area of 26,323,023 dunums, the cultivable area in 1945 was 9,205,538 dunums.<sup>9</sup> The Zionists argued that this was a gross underestimate since it excluded land which could be brought into cultivation by the application of modern agricultural techniques. The Jewish Agency held that the true cultivable area was 12,697,000 dunums.<sup>10</sup> This figure includes as cultivable 695,000 dunums of forest and if this area is excluded for purposes of comparison with the government figure, the total becomes 12,002,000 dunums. The net difference between the government and Jewish Agency figures was thus 2,801,462 dunums.

There can be no doubt that the Zionists' objection to the government's definition of cultivable land was valid. Indeed, there is evidence to suggest that for the government the terms "cultivable" and "cultivated" were synonymous.<sup>11</sup> Sir John Hope Simpson had, in effect, supported the Zionist view when he reported that only by the introduction of intensive methods of cultivation could the land support more people. In the words of the Peel Commission, however, "the Arab peasant has at present neither the capital nor the education necessary for intensive cultivation. The Jew has. But the lack of these two essential requisites does not justify the expropriation of the Arab to make way for the richer and more enterprising colonist, even though the Arab's conservative methods, and in some cases his system of land tenure, may delay development."<sup>12</sup>

Nevertheless, despite the criticism which can be levelled at the government's definition of "cultivable" land, the Palestinians still cultivated a significant part of their country. If, according to Sir John Hope Simpson, the Palestinian Arabs had by 1930 already brought into cultivation all the land they were able to, using their traditional methods, then the "cultivable" land they held in 1945 would in effect have been the same as the area *cultivated* by them in that year. Of the total of 9,205,538 dunums of cultivable land in 1945, 7,797,129, or 84.7 percent, were Arab-owned. Thus, about 30 percent of Palestine's total land area was under cultivation

<sup>8</sup> *Palestine Royal Commission Report*, p. 173.

<sup>9</sup> Sami Hadawi, ed., *Village Statistics, 1945: A Classification of Land and Area Ownership in Palestine* (Beirut: PLO Research Center, 1970), p. 37. One dunum = 1,000 square metres.

<sup>10</sup> *Ibid.*, p. 36; *Palestine Royal Commission Report*, p. 173.

<sup>11</sup> Hadawi, *op.cit.*, p. 23.

<sup>12</sup> *Palestine Royal Commission Report*, p. 174.

by the Arabs in 1945. If the Beersheba subdistrict, whose boundaries corresponded closely with those of the Negev desert, is excluded, the proportion rises to about 43 percent.<sup>13</sup>

Large areas were, moreover, cultivated by the Palestinian Arabs in all those parts of the country which are not true desert (see Table 1). Thus, in five of the fifteen northern subdistricts, more than half of the total area was cultivated by Arabs; in a further five the proportion was between 40 percent and 50 percent, and in four, between 30 and 40 percent. The figure was below 30 percent only in the Jerusalem subdistrict, which contained a large part of the arid Jordan Valley, and in the Beersheba subdistrict.

TABLE 1  
ARAB-OWNED CULTIVABLE LAND IN PALESTINE, 1945\*

<i>Subdistrict</i>	<i>Arab-Owned Cultivable Land</i> (dunums)	<i>Total Area of Subdistrict</i> (dunums)	<i>Arab-Owned Cultivable Land as % of Subdistrict's Total Area</i>
Acre	353,420	799,663	44.2
Beersheba	1,934,849	12,577,000	15.4
Beisan	156,942	367,087	42.8
Gaza	798,627	1,111,501	71.9
Haifa	345,646	1,031,755	33.5
Hebron	647,043	2,076,185	31.2
Jaffa	157,857	335,366	47.1
Jenin	471,140	835,214	56.4
Jerusalem	321,820	1,570,785	20.5
Nablus	638,491	1,591,718	40.1
Nazareth	208,975	497,533	42.0
Ramallah	369,164	686,564	53.8
Ramleh	485,717	870,192	55.8
Safad	269,935	696,131	38.8
Tiberias	163,984	440,969	37.2
Tulkarm	473,519	835,360	56.7
TOTAL	7,797,129	26,323,023	29.6

\* Hadawi, ed., *op. cit.*, pp. 31-32.

<sup>13</sup> In addition, about 63,700 dunums of state-owned cultivable land was held by the Arabs under long and short-term leases and was under cultivation by them, while limited areas of state-owned cultivable land which were not leased to them were, in fact, cultivated by them. Hadawi, *op. cit.*, pp. 31-32.

TABLE 2  
PALESTINE'S RURAL ARAB POPULATION: 1944\*

<i>Subdistrict</i>	<i>Non-Nomadic, Rural Arab Population</i>	<i>Total Arab Population</i>	<i>Non-Nomadic, Rural Arab Population as % of Total Arab Population</i>	<i>Bedouin</i>	<i>Bedouin as % of Total Arab Population</i>
Acre	52,510	65,380	80.3	560	0.9
Beersheba	—	53,550	—	47,980	89.6
Beisan	11,410	16,590	68.8	—	—
Gaza	78,460	134,290	58.4	530	0.4
Haifa	53,670	120,120	44.7	—	—
Hebron	63,010	89,570	70.4	2,000	2.2
Jaffa	40,160	109,700	63.4	2,270	2.1
Jenin	52,890	56,880	93.0	—	—
Jerusalem	65,300	147,750	44.2	7,070	4.8
Nablus	65,730	89,200	73.7	220	0.3
Nazareth	24,290	38,500	63.1	—	—
Ramallah	39,280	47,280	83.1	—	—
Ramleh	62,130	97,850	63.5	3,780	3.9
Safad	36,570	46,920	77.9	820	1.8
Tiberias	20,790	26,100	79.7	—	—
Tulkarm	63,150	71,240	88.6	—	—
TOTAL	729,350	1,210,920	60.2	65,230	5.4

\* Hadawi, ed., *op. cit.*, pp. 31-32.

Meanwhile, a significant proportion of the 1,176,745 dunums of cultivable land owned by Jews in 1945, and of the approximately 177,500 dunums of state-owned cultivable land leased to them in that year,<sup>14</sup> would have been under cultivation by the Palestinian Arabs in 1945 if there had been no acquisition of land by the Zionists.

The contention that Palestine was a barren wasteland before the Zionists' arrival or the establishment of Israel is also refuted by the demographic evidence. *Urban* populations who, by definition, do not depend on agriculture for their livelihood, are found in many of the world's desert areas, but no uncultivated desert area can support a large settled (i.e., non-nomadic) rural population. If Palestine was a desert then it would follow that its rural population would have been extremely meagre. At the end of 1944, however, of Palestine's total *Arab* population

<sup>14</sup> *Ibid.*

of 1,210,920, no less than 729,350 or 60.2 percent were classified as both rural and non-nomadic (see Table 2). They lived in a total of about 850 villages and hamlets scattered throughout the northern half of Palestine. Only in the Beersheba subdistrict, which constituted true desert, were no Arabs settled in rural locations. In five of the fifteen northern subdistricts of Palestine, more than 30 percent of the total Arab population was both rural and non-nomadic, while in four subdistricts the proportion was between 65 percent and 80 percent, and in a further four the figure was between 50 and 65 percent. Even in the two subdistricts (Haifa and Jerusalem) where less than half of the Arab population were settled rural dwellers, the proportions so classified were still as high as 45 and 44 percent respectively.

Palestine's land area is only 26,323 square kilometres, and at the end of 1944 the density of the non-nomadic rural Arab population was high (see Table 3). Excluding the Beersheba subdistrict, where no Arabs were

TABLE 3  
DENSITY OF PALESTINE'S RURAL, NON-NOMADIC, ARAB POPULATION: 1944\*

<i>Subdistrict</i>	<i>Rural, Non-Nomadic Arab Population</i>	<i>Area (sq. km.)</i>	<i>Density per sq. km.</i>
Acre	52,510	799.7	65.7
Beersheba	—	12,577.0	—
Beisan	11,410	367.1	31.1
Gaza	78,460	1,111.5	70.6
Haifa	53,670	1,031.8	52.0
Hebron	63,010	2,076.2	30.5
Jaffa	40,160	335.4	119.7
Jenin	52,890	835.2	63.3
Jerusalem	65,300	1,570.8	41.6
Nablus	65,730	1,591.7	41.3
Nazareth	24,290	497.5	48.8
Ramallah	39,280	686.6	57.2
Ramleh	62,130	870.2	71.4
Safad	36,570	696.1	52.5
Tiberias	20,790	441.0	47.1
Tulkarm	63,150	835.4	75.6
TOTAL	729,350	26,323.0	27.7

\* Hadawi, ed., *op. cit.*, pp. 31-32.



permanently settled in rural locations, the density of the non-nomadic, rural Arab population ranged from 120 per square kilometre in the Jaffa subdistrict to 31 per square kilometre in the Hebron subdistrict. In northern Palestine as a whole, the figure was 53 per square kilometre. Even if the Beersheba subdistrict is taken into account, the density of the settled and rural Arab population in the whole of Palestine was still as high as 28 per square kilometre.

Zionists and their supporters sometimes assert that the nomadic Bedouin constituted a significant proportion of Palestine's Arab population. The figures in Table 2 do not bear this out. At the end of 1944, about 65,000 Bedouin lived in the country, amounting to a mere 5.4 percent of the total number of Palestinian Arabs. Forty-eight thousand of these Bedouin, 74 percent of the total, inhabited the Beersheba subdistrict, which coincided with the area of the Negev desert, and Bedouin were found in only eight of the fifteen northern subdistricts. In those eight, the Bedouin accounted for more than 3 percent of the Arab population only in the subdistricts of Jerusalem and Ramleh, where the respective figures were 4.8 percent and 3.9 percent. It is probable that the total figure of 65,230 Bedouin was an underestimate. But even if the more accurate figure of 85,000 is adopted,<sup>15</sup> that still puts their proportion of the total Arab population at only 7 percent.

## 2. HAVE THE ISRAELIS "MADE THE DESERT BLOOM"?

Prior to Israel's establishment in 1948, modern techniques of intensive cultivation, together with land reclamation and conservation projects, had already resulted in very high yields in Zionist agriculture and the extension of cultivation into formerly semi-arid areas and regions of swamp and sand dune. Developments since 1948 have been equally impressive.

It would be churlish to belittle these achievements but they must be placed in their proper perspective. Israel, like the Jewish community in Palestine before 1948, has been fortunate in possessing both a skilled labour force and access to large financial reserves. Since 1948, Israel has benefitted from a net import of capital of \$31.5 billion.<sup>16</sup> Announcing this figure, Israeli Finance Minister Simha Ehrlich commented that "this money enabled us to conquer the desert, bring water to the Negev."<sup>17</sup>

Prior to 1948, the American Jewish community *alone* contributed at

<sup>15</sup> Janet L. Abu Lughod, "The Demographic Transformation of Palestine," in I. Abu Lughod, ed., *The Transformation of Palestine* (Evanston, Illinois: Northwestern University Press, 1971), p. 152.

<sup>16</sup> *Maariv*, July 1, 1977.

<sup>17</sup> *Ibid.*

least \$445 million to its counterpart in Palestine.<sup>18</sup> Meanwhile, the property abandoned by the Palestinian refugees has played a crucial role in Israel's economy. The United Nations Conciliation Commission for Palestine estimated the 1948 value of this property, excluding the value of uncultivable land and rural buildings, at about \$481 million.<sup>19</sup> Another, and more comprehensive, estimate is given by Dr. Yusif Sayigh. He calculates that privately-owned refugee property was worth just over \$3 billion in 1948 and had increased in value to about \$11.2 billion by 1974.<sup>20</sup>

When it is asserted that Israel has "made the desert bloom," what is often meant is simply that Israel has brought agriculture to wide areas which were formerly uncultivated. To what extent do the facts bear out this contention? The area under cultivation in Israel in 1948-49 amounted to 1,650,000 dunums of which 300,000 dunums were irrigated. Twenty-six years later, in 1974-75, the total cultivated area has expanded to 4,320,000 dunums, of which 1,830,000 dunums were irrigated. The cultivated area had thus expanded by 2,670,000 dunums. However, it is noted in the *Statistical Abstract of Israel* that in determining the cultivated area, "the area under crops was recorded as many times as the physical area sown."<sup>21</sup> Thus, the *physical area* under cultivation will be less than the figure given in the Abstract for the cultivated area because some of the land will have been sown more than once. Climatic conditions in Israel allow the cultivation of only one crop per year on non-irrigated land while, of course, irrigated land carrying orchards and vineyards cannot carry more than one crop per year. The difference between the figures for the *physical area* under cultivation and those for the cultivated area given in the *Statistical Abstract* will therefore be accounted for by irrigated areas carrying field (sown) crops, such as wheat. Of the 300,000 dunums which in 1948-49 were irrigated, 135,000 dunums carried field crops and can be assumed to have been sown at least twice, on average, in that year. The *physical area* supporting irrigated field (sown) crops would thus have been about 67,500 dunums. If the 165,000 dunums of irrigated orchards and fish ponds (included in the *Statistical Abstract* as irrigated land) are added, then the *physical area* under irrigated cultivation in 1948-49 totals

<sup>18</sup> Walid Khalidi, ed., *From Haven to Conquest* (Beirut: Institute for Palestine Studies, 1971), p. 850.

<sup>19</sup> Don Peretz, *Israel and the Palestine Arabs* (Washington, D.C.: The Middle East Institute, 1958), pp. 143-47.

<sup>20</sup> Yusif A. Sayigh, *The Economies of the Arab World* (London: Croom Helm, 1978), p. 711.

<sup>21</sup> Israel, Central Bureau of Statistics, *Statistical Abstract of Israel, 1976*, Introduction, p. 64. The figures for the cultivated area are on p. 354.

about 232,500 dunums. If, to this, the unirrigated area under cultivation, amounting to 1,350,000 dunums, is in turn added, the total *physical area* under cultivation in 1948-49 is found to have been 1,582,500 dunums. Performing the same calculations for the later figures, the *physical area* then under cultivation is found to have totalled about 3,800,000 dunums. The *physical area* under cultivation, as opposed to the cropped area, therefore expanded by about 2,200,000 dunums from the 1948-49 to the 1974-75 period.

This would appear to have been a spectacular achievement by Israel until account is taken of the land abandoned by the Palestinian refugees in the fighting of 1947-48. The United Nations Conciliation Commission for Palestine estimated that the physical area of *cultivable land* (as defined by the government of Palestine) involved was about 4,574,000 dunums.<sup>22</sup> It was noted above that in the Arab sector of Palestinian agriculture, all land that could be brought into cultivation was already being farmed by the early 1930's and the *cultivable land* abandoned in 1947-48 therefore would all have been actually under cultivation. The area within what became Israel being farmed by the Arabs in 1947 was in fact *greater* than the physical area which was under cultivation in Israel almost thirty years later.<sup>23</sup> No doubt the former included marginal land which Israel thought not worth bringing into cultivation. The figures nevertheless cast a revealing light on Israel's boasted achievements.

Israel thus began its life with a vast stock of abandoned farmland and in the early years of statehood, when immigrants were pouring in, this land was "reclaimed" for agriculture at an impressive rate. In the four year period from 1948-49 to 1952-53, the *physical area* under cultivation in Israel almost doubled, from 1,582,500 dunums to 3,339,000 dunums, growing at an average annual rate of 20.5 percent. Of the 370 new settlements established in Israel in the 1948-1953 period, no less than 350 were located on refugee property.<sup>24</sup> By 1953, the most fertile tracts of the farmland abandoned by the refugees had been largely used up, and in the subsequent 23-year period from 1952-53 to 1975-76 the *physical area* under cultivation increased by only 12.9 percent to 3,768,000 dunums, at an average rate of only 0.6 percent per annum. In the first period the physical area cultivated increased by a total of 1,756,500 dunums. In the

<sup>22</sup> John Ruedy, "Dynamics of Land Alienation," in I. Abu Lughod, *op.cit.*, p. 135.

<sup>23</sup> The difference between the area in what became Israel which was under cultivation by the Arabs in 1947 and that being farmed in Israel in 1974-75 is actually greater than the figures given here suggest because the figures in the *Statistical Abstract of Israel* include fallow land while those of the UN Conciliation Commission for Palestine do not.

<sup>24</sup> Peretz, *op.cit.*, p. 143.

second period, the total area of new land brought into cultivation amounted to only 429,000 dunums. About 80 percent, and probably more, of the 2,185,000 dunums "brought into cultivation" since 1948 thus constitutes farmland belonging to the Palestinian refugees.

Often, however, the assertion that Israel has "made the desert bloom" is meant quite literally. The validity of the claim may be tested by examining the extent to which the physical area under cultivation in the Negev has expanded during Israel's statehood. The desert's boundaries correspond closely with those of the administrative subdistrict of Beersheba and in 1949-50 the physical area under cultivation in that subdistrict was 554,000 dunums. The figure for 1975-76, meanwhile, was 1,095,000 dunums.<sup>25</sup> In the twenty-five year interval, the physical area under cultivation in the Negev was thus almost doubled and expanded at a rate of 2.8 percent on average per annum. The cultivated area in 1975-76 amounted to 8.5 percent of the total area of the Beersheba subdistrict, 4.2 percent more than the proportion in 1949-50. Even though 91.5 percent of the Negev is as barren today as it was in 1948, Israel would appear to have brought cultivation to an impressively large area of the desert. Table 1, however, shows that about 1,900,000 dunums of cultivable land was owned by Arabs in the mandatory subdistrict of Beersheba in 1945 and, as noted earlier, all of this would actually have been under cultivation. About 1,800,000 dunums of this land was abandoned during the hostilities of 1947-48.<sup>26</sup> The boundaries of the mandatory subdistrict of Beersheba and the Israeli subdistrict of the same name do not coincide exactly. Nevertheless, the two subdistricts do cover enough common territory to suggest that, again, much of the area "reclaimed" by Israel is refugee farmland.

The limited area currently under cultivation in the Negev is reflected in the region's meagre settled rural population. Although the Beersheba subdistrict's total population expanded from 14,200 at the end of 1948 to 244,600 at the end of 1976, the growth was overwhelmingly concentrated in the towns. In 1976 the Negev's urban population totalled 179,000, 73.2 percent of the region's total population, and of the urban dwellers no less than 115,500 or 64.5 percent, were residents of either Beersheba or Eilat, the two largest towns. The rural population numbered only 65,600 of whom 39,500, or 60.2 percent, were Arabs, almost all of them Bedouin,

<sup>25</sup> The figures for the physical area under cultivation in the Beersheba subdistrict in 1949-50 and 1975-76 were supplied by the Israeli Central Bureau of Statistics. A figure for 1948-49 is not available.

<sup>26</sup> Peretz, *op.cit.*, p. 144.

and only 26,100, or 39.8 percent, were Jews.<sup>27</sup> In mandatory times the majority of the Negev's Bedouin were nomadic or semi-nomadic but most have since become sedentary or semi-sedentary. Even if it is assumed that *all* the Bedouin were sedentary in 1976, the density of the Negev's settled rural population then would still have been about 5 per square kilometre.

The prospects for bringing extensive additional areas of the Negev into cultivation are, in any event, not very bright. The main limiting factor is water, not land. On average, an estimated total of about 2 billion cubic metres of water are available to Israel for all uses.<sup>28</sup> In 1974-75, 1.2 billion cubic metres were used in agriculture and 389 million cubic metres in industry and the home.<sup>29</sup> *Thus, even if it is assumed that domestic and industrial consumption will remain at current levels, only about 404 million cubic metres are available for the expansion of irrigated agriculture.* On average, each irrigated dunum requires 930 cubic metres of water per annum.<sup>30</sup> Enough water is therefore available for the extension of irrigation to only about 434,400 dunums. Meanwhile, with irrigation, well over one million dunums in the Negev could be brought into cultivation. It is true that Israel's net water supply could be stretched considerably by the exercise of greater thrift in the use of water and by the large-scale recycling of waste water. In addition, the gross supply could be supplemented by the output of sea-water desalination plants. It is nevertheless clear that for many years to come the extension of irrigation will be restricted by the limited availability of water.

The major conclusions which thus emerge are:

1. That only about half of Palestine has a true desert climate;
2. That expansion of the cultivated area was already under way *before* the occurrence of mass Zionist immigration;
3. That by about 1930 all those areas which could be cultivated by the indigenous Arab population were already being farmed by them;
4. That the area within what became Israel actually being farmed by Arabs in 1947 was greater than the physical area which was under cultivation in Israel almost thirty years later;
5. That the impressive expansion of Israel's cultivated area since 1948 has been more apparent than real since it involved mainly the "reclamation" of farmland belonging to the refugees; this is probably as true for the Negev desert as for the rest of Israel.

<sup>27</sup> *Statistical Abstract of Israel, 1977.*

<sup>28</sup> Efraim Orni and Elisha Efrat, *Geography of Israel* (Jerusalem: Third Revised Edition, Israel Universities Press, 1976), p. 441.

<sup>29</sup> *Statistical Abstract of Israel, 1976*, p. 421.

<sup>30</sup> Calculated on the basis of agricultural and water use statistics for 1974-75.