



Grapes, Goats, and Open Spaces: Sustainability in Settling the Land of Israel

By Rabbi Yonatan Neril¹

At different times in history, Jews have engaged in growing crops, tending fruit trees, and shepherding animals in the Land of Israel. These activities were critical to provide food to sustain Jews living in the Land. Yet they also may have presented challenges to environmental sustainability in the Land of Israel. Jewish tradition can teach us about sustaining the Land over time, both in pre-modern times and today.

The Jewish people have been around a long time—3747 years since Abram and Sarai came to Israel,² of which over 1500 years involved significant settlement in the Land of Israel.³ How did they manage to live in the Land of Israel for so long? While the Torah teaches us that Divine Providence (in response to the people following the commandments) played the fundamental role, the Oral Tradition as redacted in the Mishna⁴ also provides instructive guidelines for living in the Land of Israel.⁵ These teachings can inform us about living sustainably on the Land over a long period of time.

Before the destruction of the Second Temple in 70 C.E., the Jewish and gentile population expanded to about 2.1 million inhabitants.⁶ During the period before and after the destruction of the Second Temple (20 C.E. to 200 C.E., also known as the Mishnaic period), the people living in the Land of Israel were fed in good part from grain, wine, and oil produced in Israel.⁷ At this time and for centuries afterward, most Jews still farmed the Land.⁸ The central role of agriculture to the Jews in Israel is reflected in one of the six tractates of the Mishna—Zera'im (seeds)-- being about the Torah laws of agriculture in Israel.

During the Mishnaic period, several threats to Jewish farming developed at multiple levels of the farming process—the leaves and fruit of the crops; the wood of fruit trees; the land available for farming, orchards, and grazing; and the fertility of the soil itself. The Mishna contains rulings that protect against these

¹ The author thanks Evonne Marzouk for her insights and editorial comments in developing this article.

² In the year 2023 in the Jewish calendar or 1737 B.C.E.

³ Joshua led the Jewish people into Israel in 2490 (Jewish calendar) or 1270 B.C.E, where they remained (aside from the 70-year Babylonian exile) in significant numbers for about 1600 years (until about 400 C.E., when the Jewish population continued a centuries-long decline).

⁴ The Mishna was codified by Rabbi Yehuda Hanasi about 200 C.E.

⁵ According to the Ramban (Nachmanides, Spain, 1194-1270), the Torah commands that Jews settle the Land of Israel He counts settling the Land of Israel among the 613 commandments (Ramban to Sefer Hamitzvot, positive mitzva #4, and Ramban to Bamidbar 33:53.). The Midrash states that this includes planting trees and crops in the Land. (Midrash Bereshit Raba, chapter 64.)

⁶ About 30% of this total were non-Jews. This estimate was given by Dr. Meir Bar Ilan, senior lecturer, departments of Talmud and Jewish History, Bar Ilan University, personal communication, March 2010. This estimate is based on the past several decades of research, following Byatt, Anthony (1973) "Josephus and Population Numbers in First-century Palestine", in: *Palestine Exploration Quarterly*, 105, pp. 51–60. That article provides a spectrum of about twenty scholarly opinions ranging from between below one million inhabitants and above six million inhabitants.

⁷ "The Period of the Second Temple," by Professor Menahem Stern, in *A History of the Jewish People*, ed. Ben-Sasson, Harvard Univ. Press, Cambridge, MA, 1976, p. 268-70. Prof. Stern notes that during the end of the Second Temple era, "the economy of Palestine continued to be based on agriculture, as it had been throughout antiquity...The three main crops, as in earlier times, were grain, wine, and olives. In normal years the country supplied sufficient grain to meet its own needs and even to export some...Next to agriculture in economic importance among the Jews of Palestine were animal husbandry [i.e. raising cattle, sheep, and goats] and fishing." Prof. Gedalyahu Alon concurs that the three main aspects of the economy were agriculture, fruit orchards, and animal husbandry and that Israel was usually self-sufficient and even a net-exporter of grain. He proves this from several Rabbinic and historical texts (*Toldot Hayehudim B'Eretz Yisrael B'Tkufat Hamishna v'ha'Talmud*, p. 99). See also Tractate Bava Metzia 107a on Rabbi Yochanan teaching to divide one's holdings between grain, olive trees, and grapevines.

⁸ *Ibid*, "The Period," p. 232, 268, and 344. See also *The Talmud: A Reference Guide*, Rabbi Adin Steinsaltz, Random House: NY, 1989, p. 16.

threats to continued Jewish settlement in the Land of Israel.⁹ Here we will explore several of these laws, most of which were enacted for the sake of "settling the Land of Israel" (*yishuv Eretz Yisrael*).¹⁰

Voracious Goats

The Torah often describes the Land of Israel as "a land flowing with milk and honey."¹¹ The Talmud interprets this to mean "milk flows from the goats' [udders], and honey flows from the dates and the figs."¹² From this one can understand the significance of goats and shepherding to Israeli society. For example, the Sages teach how herders would take their flocks for grazing for a six-month period between Pesach and the beginning of winter, and how some herders would keep their flocks in pasture-land year-round.¹³ Professor Gedalyahu Alon, in his noted history of Mishnaic and Talmudic times, writes that some herders raised flocks of sheep and goats in great numbers.¹⁴

Yet goats and sheep are voracious herbivores, and the rabbis in the times of the Mishna and Talmud witnessed the impact these animals had in devouring crops in fields. For example, the Talmud records an incident in Babylonia of goats eating a farmer's crops: "Some goats [went into a field] in Nehardea [and] ate some peeled barley [which they found there]. The owner of the barley went and seized them, and made a heavy claim on the owner of the goats."¹⁵ Rashi comments on this passage that goats have an exceptional appetite.

In response to the threat to crops posed by goats and sheep in the Land of Israel, the Mishna prohibited raising goats and sheep in agriculturally-productive parts of Israel.¹⁶ The Mishna states, "It is not right to breed small cattle in the Land of Israel."¹⁷ According to Rashi (France, 1040-1105 C.E.),¹⁸ the Mishna aimed to ensure the fulfillment of the mitzvah (command) of settling the Land of Israel (*yishuv Eretz Yisrael*). The flocks were entering farmers' fields and eating agricultural crops-- therefore they were prohibited. Tosofot Yom Tov explains the view of several commentators that a goat could not be kept even within an individual's house, since the Sages were stringent on 'settling the Land of Israel' – even concerning a person harming their own crops.¹⁹ This enactment was also adopted by the Rabbis in Babylonia for the Jewish community there,²⁰ which in the times of the Talmud replaced Israel as the most sizable Jewish community in the world. Furthermore, the Talmud prohibits freely grazing oxen and cows as well.²¹

Abraham, Isaac, Jacob, and his sons were all shepherds, as were the tribes of Reuben, Gad, and half of Menassah. Furthermore, the Torah many times praises the Land as abundant in goat's milk. Nevertheless, the Mishna prevented these animals from harming farmers' crops by preventing Jews from raising them in settled parts of Israel. Clearly, the problem was widespread and understood as causing significant damage, leading the sages to place severe limitations to protect crops and the land.

Fruit Trees, or Temple Firewood?

Each day in the Temple in Jerusalem a significant amount of wood was burned,²² in fulfillment of three

⁹ It is also possible that the laws contained in the following Mishnaot were intended primarily to prevent damage to a farmers' crops or soil, since preventing damages to others is a prime concern of the Torah and the Sages.

¹⁰ These decrees apparently sought to ensure at a societal level the fulfillment of the mitzva incumbent on each individual Jew of settling the Land of Israel.

¹¹ Dr. Akiva Wolff notes that the Torah uses this expression sixteen times, including in Deuteronomy 31:20. It appears an additional fifteen times elsewhere in Tanakh. Dr. Wolff explores the environmental linkages of the following decree on goats and sheep in his article on the Torah portion of Vayeilech in Canfei Nesharim's *Eitz Chaim Hee* series, available at www.canfeinesharim.org.

¹² Babylonian Talmud, Tractate Ketubot 111b

¹³ Tosefta Beitza 4:11, Talmud Yerushalmi, Beitza ch. 5, Babylonian Talmud, Tractate Beitza 40a

¹⁴ Toldot Hayehudim B'Eretz Yisrael B'Tkufat Hamishna v'ha'Talmud, p. 101-2

¹⁵ Tractate Bava Batra 36b and Rashi there.

¹⁶ Mishna Bava Kama 7:7, Rambam Hilchot Nizkei Mammon 5:2. Forests and desert areas were exempt from this decree.

¹⁷ Translation adapted from Soncino edition.

¹⁸ To Bava Kama 79b. The Talmud there and on p. 80a discusses qualifications to this decree, and also mentions spiritual dangers to going against this decree.

¹⁹ Commentary to the Mishna explaining the views of Rabbi Ovadia Bartenura, Tosafot, and Rosh.

²⁰ Tractate Bava Kama 80a, according to Rav Yehuda.

²¹ Babylonian Talmud, Tractate Sanhedrin 25b

²² Tractate Yoma 4:6

different commandments.²³ Despite the substantial need for wood for use in the Temple, the Mishna prohibited using olive wood, grapevines and fruit-bearing fig trees and date palms for this purpose.²⁴ By preventing their use in the Temple, this law protected these trees from being cut down for this purpose.

According to the view of the Talmudic sage Rav Acha bar Ya'akov²⁵, the reason was because of the settlement of the Land of Israel (*Yishuv Eretz Yisrael*). The commentator Mefarsh explains: "what is the meaning of 'because of the settlement of the Land of Israel? Since if they would burn the olive trees and grapevines, there would not be found wine to drink or oil to anoint with, and the Land of Israel would be destroyed."²⁶

Mefarsh seems to understand that burning olive trees and grapevines as firewood—even for the holiest of fires in the Temple—would diminish the availability of olives and grapes for human consumption. It appears that the Mishna was concerned that the scale of fruit-tree cutting would be so great as to make the Land of Israel unfit for human settlement. About olives, Rabbi Louis Rabinowitz writes that “its supreme importance lay in its valuable oil, valuable because it not only was the main source of essential fats but had the added value that it could be preserved indefinitely without going rancid.”²⁷ An Israel stripped of its two most productive, climate-appropriate species—olive trees and grapevines—would not be able to sustain a robust population depending on the fruit of its soil. Therefore the Sages forbid cutting down these species for Temple firewood. This law preserved the economic and agricultural viability of Jewish settlement.

In modern and historical societies throughout the world, the cutting of trees has caused dramatic environmental damage, leading to pollution, flooding, and desertification, reducing available tree resources (such as grapes and olives), and causing inhabitants to have to travel great distances to find additional wood for construction, cooking and heat. In modern times, the scale of tree-cutting, including of fruit trees, far eclipses that of the Mishnaic era. A recent book, *The Boy Who Harnessed the Wind*, details the cycle of wood cutting and the stress it causes subsistence farmers in Africa today.²⁸ Our Sages sought to prevent such damage in ancient Israel with their decrees.

Preserving Farmland and the Fertility of the Soil

In addition to protecting crops and wood, Jewish tradition for life in the land of Israel also seeks to preserve farmland itself. Jewish law requires that land be designated for specific essential purposes—food production, animal grazing, open space, and urban areas. One example concerns the mitzvah of maintaining open space (*migrash*) around the cities of the Land of Israel. The Torah commands that open spaces be established around the 42 Levite cities.²⁹ The Sages understood that all Jewish cities in Israel should observe this command.³⁰ In addition, the Mishna contains a further ruling—for the settling of the Land of Israel (*yishuv Eretz Yisrael*)—forbidding turning farmland into open space and vice versa, or open space into cities and vice versa.³¹ Rashi explains that the law aimed to maintain a proper balance of farmland for agriculture, greenbelt for aesthetics, and city for settlement. He continues that the reason farmland cannot be made into a greenbelt is so as to not reduce the area available for sowing crops.

The phenomenon in Israel of converting farmland and open space to suburban housing and offices might be forbidden or at least discouraged based on this Mishna and Rabbinic commentaries on it. While the topic of Jewish sustainable urban planning is beyond the scope of this teaching, the Sages clearly saw the need

²³ These were the burning of the Tamid offering and those portions of the sacrifices offered on the altar, the burning of the incense, and maintaining the Eternal flame day and night.

²⁴ Mishna Tamid 29a and Talmud there. In the Talmud there and in the Tosefta to Menachot 9:14, Rabbi Elazar includes five additional trees in this decree, including sycamore, carob, and date-palm.

²⁵ A third or fourth century Babylonian Amora (Talmudic sage) from the academy at Sura. His view is embraced by the Rambam in Hilchot Isurei Mizbeach 7:3.

²⁶ Commentary of an unidentified Rishon (writing between 1000 and 1400 C.E.) which appears in place of Rashi, to Tractate Tamid, 29b. See *Perushi Harishonim* for the commentary of the Ra'avad, which also address *yishuv eretz Yisrael*.

²⁷ *Torah and Flora*, Sanhedrin Press, New York, 1977, p. 46. Rabbi Rabinowitz was the chief rabbi of South Africa.

²⁸ By William Kamkwamba and Bryan Mealer. The book is an autobiography by Kamkwamba about growing up in Malawi.

²⁹ Numbers 35:2,3

³⁰ Babylonian Talmud, Tractate Baba Batra 24b, and Arachin 33b, and Rambam, Hilchot Shmittah V'Yovel 13:5

³¹ Torat Cohanim, Behar 6, Mishna Arachim 33b, and Bava Batra 24b. Tosofot Yom Tov to the Mishna in Arachin explains that Rashi and the Rambam understand the halakha to be like the first view in the Mishna that this law applies to all Israelite cities.

to preserve balance in settlement in the Land of Israel. The reason appears to be out of concern for sufficient farmland and grazing area, over the long-term, to supply millions of people living in the Land. The Oral tradition demonstrates an understanding of the long-term needs of providing land and food to the inhabitants, rather than the short-term pressures that might have encouraged the “redistricting” of land for different purposes.

Another related example is a Rabbinic decree to protect the land of a person who was taken captive. The rabbis prevented the temporary user of the captive person's land from exploiting the land in a way that might weaken the land's fertility. The source for this ruling is the Talmud, which says that "the Rabbis made a decree in order that [the tenant] would not degrade it [the field]."³² Under this decree, the tenant who was working the field of his captive relative is considered as a sharecropper (*aris*) on the land. Such a person works a field for its owner and receives a portion of the produce in return.

The Sages' ruling established the legal status of such a tenant as a person who is invested in the long-term fertility of the field. Otherwise, without knowing when the captive might return, this short-term farmer had a short-term incentive to extract produce and profit from the field without investing in its long-term sustainability. As Rashi explains, the Sages' decree prevents a situation in which the relative will likely "not fertilize the land with manure and he will plant incessantly and cause the land to deteriorate."³³

Here the concern is not for the sustainability of the Land of Israel in general (*yishuv Eretz Yisrael*) but the soil fertility of the land of an individual Jew who has been taken captive. This concern for soil-fertility is particularly significant in light of the Pulitzer-prize winning author Dr. Jared Diamond's linkage of soil fertility to the long-term sustainability of societies, and its lack as a key factor in their decline.³⁴

Lessons in Long-Term Thinking

These four decrees present an ancient Jewish environmental sustainability—living in a way that does not unduly deplete the natural resource base on which we depend. Informed by an understanding of the impacts of sheep and goats, fruit-tree-cutting, urban growth, and exploitative farming, the Oral tradition legislated a responsible path which would sustain the Land for the long-term. Our Sages acted decisively to prevent damages, even when their choices seemed contrary to short-term motivations such as wood for the Temple or preserving Israel as a place of “milk and honey.”

While quite progressive in Mishnaic and Talmudic times, in our times these specific laws carry little practical significance.³⁵ The Temple is not standing, Jewish shepherds are few in number,³⁶ and no relatives farm the land of a farmer taken captive. Nonetheless, these laws, in providing us clues as to how the Jewish people lived on the Land for so long, underscore the importance of national thinking and planning for sustainability, and elucidate Jewish values which may help us address current and future challenges.

In Israel today, it is not goats but water scarcity that presents a sustainability challenge. The current population is likely about five times larger than it was at its peak before the Temple was destroyed. The state of Israel struggles with ensuring water access to ten million inhabitants west of the Jordan River. Per capita water consumption has also multiplied, due to the ease and cheapness of piped-water.³⁷ Israel's main aquifers and the Sea of Galilee have dipped below their red lines in recent years, endangering water quality.³⁸ This water scarcity

³² Babylonian Talmud, Tractate Bava Metzia 39a

³³ Rashi to Bava Metzia 38b. See also Rashi to 39a where he gives a slightly different explanation. In his work *Agriculture in Iron Age Israel*, Prof. Oded Borowski details numerous allusions in the Tanakh to use of manure to restore soil fertility, and understands that it was a common practice in Biblical Israel. *American Schools of Oriental Research: Boston*, 2002, p. 145-8

³⁴ *Collapse*, Viking Publishers: New York, p. 489-90

³⁵ Perhaps the only one with widespread applicability is that on farmland, open space, and urban area, but the reasons why it is not observed today are beyond the scope of this piece.

³⁶ Regarding the applicability of the decree of Jewish sheep-herders today, see the Talmud, Tractate Baba Kama 79b that one can raise sheep in pens in Israel. See also Shulchan Aruch, Choshen Mishpat 409:1 that is is permitted to graze sheep freely in Israel. Many 20th century halakhic authorities wrote responsa on this issue at a time when fields are common to Jews and therefore damage is possible from sheep and goats .

³⁷ For more on the topic of water use in the land of Israel, see the *Jewcology* water article written by this author.

³⁸ Summer 2008, from Israeli Ministry of the Environment, www.environment.gov.il and Adam Teva v'Din, www.adamteva.org.il

poses a challenge to Israeli agriculture, which today depends on significant quantities of water for irrigation. Beyond Israel, countless millions of people worldwide face the challenge of access to high quality fresh water for their daily needs and their farms.

Today, billions of people seek a daily portion of grain, fruit, and sometimes meat. The cost of providing it to them is only just beginning to be understood. As individuals and as a larger society, what can we do to promote long-term sustainability for ourselves and our children?

The ancient wisdom of our tradition can provide some clues to help us find ways to sustain ourselves on the Land. A number of projects in Israel seem to build upon this wisdom and apply it to our times. For example, an innovative, experimental project underway in Israel purifies and recycles waste-water from mikvehs (ritual baths) for use in irrigation. The project may be expanded to recycle water from sinks and washing machines. Such reuse of water may be one way to encourage more wise use of this precious resource, in Israel and beyond.³⁹

Ultimately, the four decrees mentioned concern either preventing damage to another or addressed a sustainability problem by restricting one aspect of resource use in order to ensure long-term needs. As individuals, we would do well to consider today whether there are areas of our consumption where we could prioritize long-term needs, especially in our choices for using energy, water, food, and consumer products, each major contributors to today's sustainability challenges.

The Rabbis' understanding of these decrees as linked to *yishuv Eretz Yisrael* is striking. It underscores that settling the Land of Israel is not only about the commandment incumbent upon individual Jews, but the greater communal responsibility for settling sustainably. And it is not just about settlement of the Land now, but also sustaining it for future generations. We must live on the earth in a way that lasts for generations by maintaining its natural resource base.

In his commentary to the decree on the tenant farmer (our fourth source), Rashi invokes the language of Genesis 2:15: "Now the Lord God took the man, and He placed him in the Garden of Eden *to work it and to guard it.*"⁴⁰ According to the Jewish mystics, the Garden of Eden is much more expansive than we think. As Sefer Habahir teaches, "Rabbi Amorai asked: Where is the *Garden of Eden*? It is on earth."⁴¹

At a deeper level, these enactments and sustainable living are not just about ensuring our own survival, as important as that is. They enable us to fulfill the Divine mandate for stewardship of this planet with which G-d entrusted us. May we embrace sustainable living as an act of profound religious significance, and merit to live once again within a Garden of Eden on this planet Earth.

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³⁹ Haaretz, June 2, 2009, "Experimental program to recycle waste-water tries to get God, Mother Earth on the same page" by Zafrir Rinat, online at www.haaretz.com. The article describes a project of the Jewish environmental organization Shomera.

⁴⁰ Rashi uses the same language of 'to work and to guard' in describing a relative farming a captive's field.

⁴¹ The Book of Illumination, 2:31, attributed to Rabbi Nehunia ben haKana. It is considered as one of the most influential source of Kabbalistic teachings.