



Grapes, Goats, and Greenbelts: Sustainability and Settling the Land

By Yonatan Neril

The period of the Omer and the festival of Shavuot present opportune times to explore our connection and relationship to the land. On the first day of the Omer period, Cohanim (priests) made a barley offering in the Temple in Jerusalem.¹ On the fiftieth day, Shavuot, the Cohanim would prepare and offer two loaves of wheat bread from the new wheat harvest, as well as animal sacrifices. The grain offerings of the Omer (barley) and Two Loaves (wheat) had to come from the choicest grain of the land of Israel,² and thus represented an offering to G-d of the best of Jewish agriculture in Israel. The Torah calls Shavuot "Chag Habikkurim," the festival of the first fruits, because it centered on the general Jewish population bringing to the Temple offerings of the first fruits of their crop and tree harvest.³ All together, the offerings of Shavuot were thus brought from Jews' fruit trees, cattle herds, and agricultural fields.

The Jewish people have been around a long time—3747 years since Avram and Sarai came to Israel,⁴ of which over 1500 years involved significant settlement in the land of Israel.⁵ How did they manage to live in the land of Israel for so long? While Divine Providence in response to the people following the commandments played the fundamental role, the Oral Tradition provides guidelines for living in the land of Israel that can give us a clue about living sustainably on the land over a long period of time.

The time period before and after the destruction of the Second Temple (20 CE to 200 CE, also known as the Mishnaic period) was a period of increased demand on the natural resources of the land of Israel. During this time, the Jewish and gentile population expanded to about 2.1 million inhabitants,⁶ 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.

According to the Ramban (Nachmanides), the Torah commands that Jews settle the land of Israel,⁹ and

1 Vayikra (Leviticus) 23:11

2 The Mishna in Menachot 8:1 even lists the regions where the choicest wheat was grown, including the Judaen Plain.

3 Shemot (Exodus) 23:16

4 In the year 2023 in the Jewish calendar

5 Joshua led the Jewish people into Israel in 2490, 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).

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. He provides a spectrum of about twenty scholarly opinions ranging from between below one million inhabitants and above six million inhabitants.

7 Op. cit 1: A History, p. 268-70. Prof. Menahem 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 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 (p. 99). See also Bava Metzia 107a on Rabbi Yochanan teaching to divide one's holdings between grain, olive trees, and grapevines.

8 A History of the Jewish People, ed. Ben-Sasson, Harvard Univ. Press, Cambridge, MA, 1976, p. 232, 268, and 344. The Talmud: A Reference Guide, Rabbi Adin Steinsaltz, Random House: NY, 1989, p. 16.

9 Ramban 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.¹⁰ Yet 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 threats to continued Jewish settlement in the land of Israel.¹¹ Most of the laws that will be explored in this dvar Torah were for the sake of "settling the land of Israel" (yishuv Eretz Yisrael).¹²

From Biblical times to the present, humans' involvement with fruit orchards, grazing, and agriculture – all essential for providing the food that sustains us – have presented challenges to environmental sustainability. The Oral tradition can teach us about sustaining the land over time, both in the times of the Mishna and today.

Voracious Goats

The Torah often describes the land of Israel as "a land flowing with milk and honey."¹³ The Talmud interprets this to mean "milk flows from the goats' [udders], and honey flows from the dates and the figs."¹⁴ 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.¹⁵ 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.¹⁶

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."¹⁷ Rashi comments on the goats' 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.¹⁸ The Mishna states, "It is not right to breed small cattle in the land of Israel."¹⁹ This enactment appears in the Mishna, the Oral tradition that was codified by Rabbi Yehuda Hanasi about 200 C.E. According to Rashi,²⁰ 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, thus they were prohibited. Tosafot 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.²¹ This enactment was also adopted by the Rabbis in Babylonia for the Jewish community there,²² which in the times of the Talmud replaced Israel as the most sizeable Jewish community in the world. Furthermore, the Talmud in Sanhedrin 25b prohibits freely grazing oxen and cows as well.

Had the problem been of a limited scale, the Mishna would surely not have placed severe limitations on shepherding, the occupation of Abraham, Isaac, Jacob, his sons and the tribes of Reuben, Gad, and half of

10 Midrash Bereshit Raba, chapter 64.

11 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.

12 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.

13 Rabbi 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. Rabbi Dr. Wolff explores the environmental linkages of the following decree on goats and sheep in his dvar Torah on Parshat Vayeilech in Canfei Nesharim's *Eitz Chaim Hee* series:

<http://canfeinesharim.org/community/parshas.php?page=17831>

14 Babylonian Talmud, Ketubot 111b

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

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

17 Tractate Bava Batra 36b and Rashi there.

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

19 Translation adapted from Soncino edition.

20 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.

21 Commentary to the Mishna explaining the views of Rabbi Ovadia Bartenuira, Tosafot, and Rosh.

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

Menassah. Even though the Torah praises the land as abundant in goat's milk, the Mishna prevented these animals from harming farmers' crops by preventing Jews from raising them in settled parts of Israel.

Fruit Trees, or Temple Firewood?

Each day in the Temple in Jerusalem a significant amount of wood was burned (Tractate Yoma 4:6), in fulfillment of three different commandments.²³ The wood required was so substantial that the Mishna prohibited using olive wood, grapevines and fruit-bearing fig trees and date palms for burning in the Temple.²⁴ This law protected these trees from being chopped down for this purpose.

According to the view of the Talmudic sage Rav Acha bar Ya'akov²⁵, this Mishna is 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

According to the Mefarsh's explanation, 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 the olive, 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 even today.²⁸ Our Sages avoided this damage in ancient Israel with their decrees.

Preserving Farmland and the Fertility of the Soil

In addition to protecting crops and wood, the Mishna also contains a ruling to preserve farmland itself. One example concerns the mitzvah of maintaining greenbelts around the cities of the land of Israel (*migrash*). The Torah commands that greenbelts 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 greenbelts and vice versa, or greenbelts 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 land for sowing crops. Jewish law requires

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 from the academy at Sura. His view is embraced by the Rambam 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 erez 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 Baba Batra 24b, and Arachin 33b, and Rambam, Hilchos 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.

that land be designated for specific essential purposes—food production, animal grazing, open space, and urban areas.

The widespread phenomenon in Israel, North America, and throughout the world—of converting farmland and open space to suburban housing and offices—is forbidden by this Mishna. While the contours of Jewish sustainable urban planning are beyond the scope of this *dvar Torah*, the Sages clearly saw the need 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 Talmud in Bava Metzia 39a says that “the Rabbis made a decree in order that [the tenant] would not degrade it [the field].”

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.”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.

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.³³

Long-Term Lessons in a Short-Term World

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 needs such as wood for the Temple or the description of Israel as a place of “milk and honey.” These laws give us clues as to how the Jewish people lived on the land for so long. It may also give us some examples from which to learn in our current society.

Most of these laws, while quite progressive in Mishnaic and Talmudic times, carry little practical significance today.³⁴ The Temple is not standing, Jewish shepherds are seldom seen,³⁵ and no relatives farm the land of a farmer taken captive. Thus our sustainability challenges today are not about grass or grapes.

In Israel today, it is a challenge to live sustainably. For example, Israel struggles with ensuring water access to ten million inhabitants west of the Jordan River using limited water resources. The current population is likely about five times larger than it was at its peak before the Temple was destroyed. Per capita water consumption has also exploded, due to the ease and cheapness of piped-water. Israel also suffers from

32 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

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

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

35 Regarding the applicability of the decree of Jewish sheep-rearers 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 it 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.

significant air pollution, caused in part from coal and gas-burning power plants on the coast.

Beyond Israel, the challenges of water and air are faced by countless millions of people worldwide. Today it is billions of people who seek a daily portion of grain, fruit, and 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. Several ongoing projects seem to build upon this ancient wisdom and apply it to today. For example, one innovative, experimental project underway in Jerusalem seeks to purify and recycle 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 Israeli and beyond.³⁶

Another exciting project aims to harness the sun's rays to heat water and thus reduce electricity demand. A project of the Good Energy Initiative works to provide financial incentives to poorer families in Israel to use solar water heaters instead of conventional heaters that rely on burning fossil fuels.³⁷

At a personal level, there are many things we can do to take action. Ultimately, the four decrees mentioned concern either preventing damage to another or prioritizing long-term needs by exercising restraint in the short-term. We would do well to consider today whether there are areas of our consumption where we could exercise restraint, especially in our choices for using food, water, energy, 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 how settling the land of Israel is not only about the mitzva 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 land in a way that lasts for generations by maintaining the natural resource base of the land and not degrading it. The Midrash teaches that settling the land of Israel is weighted against all the commandments in the Torah.³⁸ In addition, sustainably settling the land of Israel can be a model for the whole world and a light to the nations.

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.*"³⁹ 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."⁴⁰

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 God entrusted us. Perhaps that is why the agriculturally significant time of the Omer is also understood to have a deep spiritual significance. 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.

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

37 For more on this project see <http://www.goodenergy.org.il/language/en-US/En/Projects/Project-Portfolio/Kol-Dudi-Solar-water-heaters.aspx>

38 Sifrei to Devarim 12:29, Tosefta Avoda Zara ch. 5.

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

40 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.