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ARTICLE



Land, water and the changing Dead Sea environment: A microhistory of Kibbutz Ein Gedi

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ABSTRACT

The article examines the changing relationship Kibbutz Ein Gedi has developed with its environment over a period of more than 60 years. It focuses on two interrelated themes: the *considerations* that influenced decisions on how best to use the land around the kibbutz, the freshwater at its disposal and the labor of its members; and the community's changing *self-image* and "environmental imaginary." Initially, the space in which the community lived was shaped by agriculture and a pioneering ethos. Then, because of the growth of consumerism and the development of tourism, Ein Gedi began to brand itself as a unique holiday destination. However, since the 1990s, the fast-retreating Dead Sea shoreline and the appearance of sinkholes have reshaped Ein Gedi's environmental imaginary and altered its decision-making priorities.

KEYWORDS

Water management;
ideology and land use;
Zionism; agriculture; tourism;
sinkholes

Ein Gedi has a long history of being considered special. An oasis covering about 1000 dunams (250 acres) on the western shore of the Dead Sea, it has been a site of human settlement at various stages in history. The Hebrew Bible mentions Ein Gedi a number of times. Song of Songs (1:14), for instance, evokes a particularly romantic image: "My beloved is unto me as a cluster of camphire in the vineyards of Engedi." During the Roman and Byzantine periods (first to sixth century CE) Ein Gedi was a flourishing "large village of Jews" sustained by agriculture, with date palms serving as its chief crop.¹ Around the turn of the seventh century CE, however, the thriving village was abandoned. Since then, Ein Gedi was only occupied intermittently, for instance by Bedouin tribes that inhabited the oasis during the winter months. Nineteenth-century travelers and writers nonetheless recognized the site's potential for new settlers. In 1806 Ulrich Jasper Seetzen, the first modern European explorer to document his travels all around the Dead Sea, remarked that, "through a careful cultivation it is still now quite easy, to turn Ein Gedi into a charming settlement, which would be separated from the world from one side by the sea and from the other by a barren desert."² The British Palestine Exploration Fund (PEF) surveyor, Colonel Sir Charles Wilson, who visited the oasis in the 1860s, observed that "The leafy thicket of 'Ain Jidy, at the foot of the sheer and towering cliffs of the barren mountain, presents a strange contrast to the desolation which surrounds it."³ The Russian-born Hebrew writer and early Zionist Elhanan Leib Lewinsky, who in 1892

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published a utopian description of how Palestine would look like in 2040, once it had been developed by Zionist pioneers, envisaged Ein Gedi becoming a “large city famous for its vineyards and its beauty” with an active harbor.⁴

In line with these nineteenth century observations and predictions, the modern-day Kibbutz Ein Gedi, which is the subject of this article, is often depicted by both locals and visitors as a marvel. A famous Israeli folk song, dedicated to the kibbutz and penned by two members of a volunteer work camp who stayed in Ein Gedi briefly in the late 1950s, includes the following verses:

The ground will turn yellow in the scorching sun
 And choking dust will fly high
 But Ein Gedi won't wither with wrinkles
 In it, shades of green and brown will rule.⁵

At the entrance to the small local museum, showcasing the history of the kibbutz, there is a plaque with an aerial photograph of the settlement taken in 1962 and a text written by Ayala Gilad, who joined Ein Gedi shortly after it was founded: “This is a story of the human spirit. The spirit that brought the founders of Ein Gedi to settle in this place. A remote, isolated spot, surrounded on three sides by a hostile border of steep canyons, desert and the Dead Sea.”

Taking this challenging physical setting as its starting point, this article examines the changing relationship Ein Gedi has developed with its environment over a period of more than 60 years. To assess this relationship, it focuses on two interrelated components. First, this study assesses the *considerations* that influenced decisions on how best to use the land around the kibbutz, the freshwater at its disposal and the labor of its members. The focus on a small, well-documented community and the space it inhabits provides a fruitful case study through which to explore how broad political and economic forces as well as ideological preferences can lead to the reshaping of a local environment.

A second component of Ein Gedi's relationship with its environment is the community's changing *self-image*. The article draws on Diana K. Davis' notion of “environmental imaginary” – the constellation of ideas that groups of humans develop about a given landscape.⁶ Much of the literature on this topic demonstrates how environmental imaginaries were constructed, often in a colonial context, and subsequently appropriated or challenged.⁷ In line with previous studies, the Ein Gedi example shows that such imaginaries and narratives are not static. Furthermore, the article traces how and why the self-image of the kibbutz changed and argues that it went through three relatively distinct phases. Initially, the space in which the community lived was shaped by a pioneering ethos, and by practices that had been developed in other climes. Following Israel's territorial conquests in the 1967 Six-Day War, and because of the growth of consumerism as well as domestic and international tourism, Ein Gedi increasingly began to brand itself as a unique holiday destination. During these first two phases, the environment around the kibbutz was seen as largely passive. The surrounding area was modified and reshaped to restore its ancient agriculture, increase the land's productivity and, later on, make it more convenient and inviting to visit or dwell in.

This approach began to change during the third phase. In recent decades, the fast-retreating shoreline of the Dead Sea and the geological problems this has spawned increasingly dominate both Ein Gedi's environmental imaginary and its decision-

making priorities. Decisions driven by ideals, the geopolitical context, economic opportunities and shifts in demand did not disappear, but from the 1990s onwards physical changes in the environment began to assert themselves. Meanwhile, the self-image of the kibbutz as a holiday destination has been adversely affected.

The micro-historical approach, which sheds light on large themes through a detailed study of small places, enables us to show how Ein Gedi is at the same time emblematic and unique within an Israeli context. In its early decades, the kibbutz provides a prime example of the link between ideology and land use, and was fairly typical of broader changes in Zionist settlement practices.⁸ However, the environmental degradation it has faced in recent years has very few parallels in Israel and is better understood in relation to settlements next to other receding lakes across the world. The dramatic decline of Lake Urmia in Iran and the Aral Sea in Kazakhstan and Uzbekistan has produced images of ships stranded on land dozens of kilometers from the retreating shoreline.⁹ The Dead Sea is receding for similar reasons, though the scale of the problem and its implications are different. Both scientists and environmental activists have written much about the regression of the Dead Sea and the sinkholes created by the falling regional water table.¹⁰ An examination of the recent history of Ein Gedi highlights the social and economic repercussions of these immense environmental changes.

Pioneers

The story of modern-day Ein Gedi begins with conquest. While the oasis was designated for the Jewish state in the November 1947 UN partition plan for Palestine, in early March 1949, as the 1948 Arab-Israeli War drew to a close, the area was under the nominal control of Transjordan's Arab Legion.¹¹ It was then that the archeologist and Israel Defense Forces (IDF) Major Shmarya Guttman made a last-ditch attempt to convince General Yigal Alon, the commander of Israeli forces on the southern front, to set aside a small contingent to capture the historical sites of Masada and Ein Gedi. Alon eventually agreed. There were no roads along the southwestern shore of the Dead Sea. In fact, because the shoreline was much higher than it is today, in some places it touched the cliffs to the west. Therefore, the small force had to be ferried by a boat that belonged to the Palestine Potash Company (later renamed Dead Sea Works) plant at the southern end of the lake. They landed near Ein Gedi halfway through the night between March 9 and 10, 1949, where they encountered a group of 13 Bedouins. Guttman and the group's sheikh had known each other previously, so the former was able to convince the Bedouins to leave the site.¹²

From 1949 to 1953, the IDF held a tiny military outpost to defend Ein Gedi, which was situated only a few kilometers from the Jordanian border.¹³ The driving force behind the idea of creating a permanent settlement in Ein Gedi was Zionist activist turned-Development Ministry official, Yehuda Almog. In the late 1930s Almog had been involved in the establishment of the first kibbutz by the Dead Sea, Beit Ha-Aravah, but this settlement was abandoned during the war of 1948.¹⁴ Thereafter, Almog focused his energies on the area alongside the southwestern Dead Sea shore, which Israel controlled (this area later came under the jurisdiction of the Tamar Regional Council with Almog serving as its first head). In 1951 he tirelessly petitioned both government institutions and the Zionist pioneering movements in

an effort to bring about the development of agriculture, tourism and settlement near the lake. His efforts were boosted by the opening of a makeshift unpaved road alongside the Dead Sea from Mount Sodom near the southwestern edge of the lake to Ein Gedi.¹⁵

The first step toward establishing a permanent settlement in Ein Gedi was undertaken by NAHAL, a hybrid between a military unit and a pioneering organization. NAHAL (*No'ar Halutzi Lohem* or “pioneering fighting youth”) consisted of youth movement members who enlisted in the military as part of groups called *gar'inim* (seeds, or pioneering nuclei). As a new tree emerges from a seed of a fruit so a new settlement was supposed to emerge from the *gar'in* of NAHAL settlers.¹⁶ The recruits underwent basic training and then divided the rest of their service between military duties and several months of work in new settlements. Many of their duties in these new settlements were agricultural, though NAHAL members were also involved in the construction of roads such as the one opened between Sodom and Ein Gedi. The NAHAL settlement in Ein Gedi, founded in February 1953, was the fifth to be established in the country.¹⁷ Like the others, its long-term goal was to populate a frontier area.¹⁸

The tasks set out for the temporary NAHAL settlers were summarized in a telegram sent by the Zionist fund-raising organization Keren Hayesod to its representative in London in February 1954:

Ein Gedi founded last Purim. Situated Dead Sea shore sixty kilometers north [of] Sdom. Important border stronghold settlement occupied [by] 120 members [of] Nahal charged with development [of] agricultural opportunities and [e]radication [of] malaria for permanent settlers. Has abundant water supply from two natural springs sufficient irrigation [for] one thousand dunams. Biblical times very prosperous agricultural community. Intending recapture soil [to] restore former agricultural prosperity potentially large yishuv [settlement].¹⁹

Between 1953 and 1956, NAHAL soldiers posted to Ein Gedi, with the advice and assistance of experienced volunteers from more established settlements, made strides in achieving two of the goals mentioned in the telegram: preparing the ground for a permanent settlement and developing the oasis' agricultural capacity. Several dunams were cleared of rocks and subsequently used to grow tomatoes and other crops.

The eradication of malaria was a *modus operandi* that was replicated from other parts of the country. Malaria-bearing mosquitos had been the *bête noir* of early Zionist settlers in the late nineteenth century, particularly in northern Palestine and near swamps in the coastal area. In the 1920s and 1930s Dr Israel Kliger, a public health scientist, developed a method to tackle malaria by draining swamps, clearing overgrown canals, diverting springs, monitoring bodies of water and educating the population about the disease.²⁰ In 1953 Almog sought to implement in Ein Gedi the system, which had been tried and tested around the settlements in the Jezreel Valley, even though the soil, topography and climate were different. The area near the NAHAL settlement as well as the springs around the oasis were sprayed. High-ranking health officials who visited the site recommended clearing the vegetation from the banks of the streams, draining natural pools, and ensuring that water flowed directly into the Dead Sea.²¹ The oasis was being transformed to create what was believed to be a healthier environment for modern settlers. However, these efforts proved unnecessary. Early settlers reported no malaria

cases. Instead, they remembered poisonous snakes as a health hazard they had to contend with.²²

Almog's vision of establishing a permanent settlement at Ein Gedi encountered opposition from Yosef Weitz, the influential Director of the Land and Afforestation Department of the Jewish National Fund. Weitz questioned whether there was sufficient arable land and freshwater in the oasis to sustain a viable settlement. He also preferred to have the first group of settlers, who were preparing to move to Ein Gedi, remain at Neve Ilan in the hills west of Jerusalem instead. Eventually, however, Finance Minister Levi Eshkol ruled in favor of replacing the temporary NAHAL settlement with a permanent kibbutz.²³ The kibbutz movement had begun in 1910 with the founding of Degania in what was then Ottoman Palestine. In the decades that followed, many other kibbutzim (plural) were established, and while there were ideological differences between them, all adhered to the principles of equality among members, communal decision-making and ownership of resources, mutual assistance and responsibility as well as self-labor rather than hired labor.²⁴ Up until the late decades of twentieth century these settlements largely relied on agriculture and Ein Gedi sought to do the same.

The first permanent settlers – 77 members of the first *gar'in* of the kibbutz – arrived in Ein Gedi in January 1956, infused with a pioneering spirit.²⁵ They saw themselves as continuing the Zionist pioneering tradition of the late nineteenth and early twentieth century, which brought about the establishment of new settlements through “conflict with the inhospitable land.”²⁶ At the same time, the early settlers were eager to revive the agriculture that had thrived at the site in ancient times. When a water pipe from one of the springs was installed in August 1958, the bulletin of the kibbutz, *Afik* (“river bed”), commented that “it will now be possible for the first time (in two thousand years) to water the area.” Following discussions with the Jewish National Fund on preparing lands for agricultural use, in December 1958, *Afik* declared “we will make a further step toward enlarging our fields and conquering the land that in part was toiled in the days of the ancient settlement that resided here.”²⁷ In this respect, the self-image of the first *kibbutzniks* in Ein Gedi was reminiscent of the one held by French settlers in North Africa in the nineteenth and early twentieth century. While the French settlers saw themselves as the heirs of Rome, who would “again expand the cultivable area, dry out the swampy regions and transform them into fertile plains,” members of Kibbutz Ein Gedi perceived their efforts as a revival of the Jewish settlement that had flourished in the oasis in the Roman era.²⁸

Like the NAHAL settlement, the kibbutz was originally located in the oasis, near the remains that were later excavated of ancient Ein Gedi. South of the kibbutz was Wadi Arieijeh, which gathered rainfall from the hills near Hebron and formed a small delta before flowing into the Dead Sea.²⁹ North of the settlement was Wadi Sdeir, the catchment of which includes the hills southeast of Bethlehem. As part of a national effort in the 1950s to give hills, valleys and rivers Hebrew names, the Governmental Names Committee changed the Arabic names of the two streams that fed the Ein Gedi oasis. Arieijeh was renamed Nahal Arugot (“River Garden Beds”), an apt choice considering the terraces used by the kibbutz for agriculture were nearby this stream. Sdeir was renamed Nahal David, commemorating the biblical story of the young David who hid from King Saul in a cave near Ein Gedi.³⁰ Hence, while the settlers sought to reclaim the land, the government created a map that would reflect the country's transformation.

Ironically, it took kibbutz members a while to get used to the new names, but in the long run these changes contributed to the construction of a self-image of a restored Jewish community.³¹

Another notable characteristic of the self-image of the kibbutz in its early years was its remoteness. Although Israel is a small country and Jerusalem is only some 40 kilometers away as the crow flies, the border with Jordan ran from north to west, along a more or less perpendicular line, a short distance from Ein Gedi. This meant that, for practical purposes, Jerusalem was very far. The voyage to the nearest urban center, Beer Sheva, along unpaved dirt roads that went down valleys and up hills, took several hours and is remembered by veterans as arduous.³² To ease the difficulties of getting supplies to and fresh produce out of Ein Gedi, the kibbutz began to examine the possibility of purchasing a light aircraft or, alternatively, using a barge to ferry a truck to the Dead Sea Works plant at the southern end of the Dead Sea. These plans were set aside when, thanks to the intervention of the Minister of Labor Yigal Alon, the road from Sodom to Ein Gedi was paved and opened in 1962.³³ As we shall see below, support from sympathetic political leaders in the Labor movement would continue to help the community overcome the environment in order to improve access to the rest of the country.

In July 1959 the kibbutz relocated a few kilometers south, moving to an elevated plateau that slants from the hills in the west toward the Dead Sea. Just south of Nahal Arugot, the plateau overlooks the oasis. Ruti Ron, one of the founders, remembers the romanticism associated with the original site of the kibbutz, with members bathing in a natural pool in Nahal David. "Some members didn't want to leave," she recalled.³⁴ Indeed, Nahal David was considered a romantic spot to such an extent that, during the first 20 years of the kibbutz, members' weddings were held there.³⁵ But the new site on the plateau offered clear advantages such as newly built and more comfortable lodgings and the freeing up of more land in the oasis for potential agricultural use.

In its early years, decisions on how best to use the land and freshwater at the community's disposal, or the labor of its members, were dominated by pioneering considerations. Ein Gedi placed a strong emphasis on agriculture, in line with the broader priorities of the Israeli government.³⁶ The outlook was optimistic in terms of land capacity: in January 1957, the Jewish National Fund set out to prepare 800 dunams for agriculture. The works included transforming the delta of Nahal Arugot by digging a 1.5 km canal to drain the stream straight into the Dead Sea, thus freeing more land for growing crops.³⁷ Furthermore, both the NAHAL settlement and the kibbutzniks from 1956 onwards spent a lot of time and energy clearing boulders, rocks and stones from the area between Nahal David and Nahal Arugot. The Ein Gedi settlers and the national institutions that supported them felt free to reshape the oasis and divert its springs as they pleased. In this respect, they followed the precedent set by Degania Bet, Beit Zera and other kibbutzim in the north of the country that had redirected the waters of the Jordan and Yarmouk Rivers to irrigate their fields in the 1930s and 1940s, prioritizing local agricultural development above all other considerations.³⁸

According to the practices that were prevalent at the time, there were some sound practical reasons for pursuing agriculture in Ein Gedi. The hot winters meant that the settlers could produce vegetables earlier in the season than elsewhere in Israel.³⁹ Ein Gedi's produce, especially tomatoes, fetched good prices in Tel Aviv, greatly contributing to the coffers of the NAHAL settlement and, later, the kibbutz that replaced it.

Furthermore, in those early days, around four million cubic meters of water annually, flowing not only from Nahal Arugot and Nahal David but also from two springs (Ein Gedi and Sholamit), were considered “cheap” (i.e., plentiful).⁴⁰ However, there were also inherent problems with growing crops in the oasis. For instance, in the early 1960s, the Jewish National Fund cleared 200 dunams north of Nahal Arugot, but after the first winter season, the area filled once more with rocks that were carried down by the floods. Hence the area had to be cleared yet again.⁴¹ Furthermore, even after years of extensive clearing, only about 250 dunams were suitable for agriculture and even in these the quality of the rocky soil was considered poor and yield was not high.⁴² The concerns expressed by Yosef Weitz back in 1955 about the lack of sufficient arable land were not unwarranted.

Throughout the 1960s, the kibbutz and the Ministry of Agriculture looked into possible solutions for the poor quality of the soil in the oasis. These included experimenting with hydroponics (which proved costly), building terraces and laying half a meter of more fertile soil brought in from elsewhere.⁴³ One solution, which emerged from a meeting between kibbutz member Dan Bnayahu and the inventor Yeshayahu Blass in 1961, turned Ein Gedi’s terraces into a testing ground at the forefront of global agricultural innovation. Yeshayahu and his father, the hydrological engineer Simcha Blass, were pioneers in developing plastic emitters for drip irrigation, but struggled to find farmers who would be willing to try their new technology. Bnayahu, all too aware of the great heat and immense evaporation in Ein Gedi, believed that drip irrigation might offer a solution for the kibbutz. He suggested that, along with the water, the drip irrigation emitters could be used to bring nutrients to near the base of the plant, thus compensating for the poor quality of the soil. The new method was tried on one and a half dunams of tomatoes and turned out to be an immense success, doubling the produce compared to land irrigated by sprinklers.⁴⁴ In the short term, drip irrigation and plastic greenhouses, to which we will return later on, helped the kibbutz maximize its agricultural yields.

Some 20 years later, members of the first *gar’in* emphasized how central agriculture had been in their thinking when the kibbutz was established. Arie Shahal remembered that “at the beginning we were naïve, we thought we could live off agriculture alone. We thought that the climatic advantages that brought us high earnings in the early years would give us a fine income for many years.” Dan Bnayahu added: “I knew already in the early years that in the future we won’t be able to ‘escape’ from the hospitality [industry].” However, he “did not believe that many members would want to work in hospitality.”⁴⁵ In fact, when the possibility of investing in tourism and establishing a guesthouse was first raised in summer 1956, members of the kibbutz were divided. Supporters argued that a guesthouse could help support the community financially and that if the kibbutz did not open one, someone else would. Those who objected believed that a guesthouse “would distort the kibbutz character of Ein Gedi’s community” and worried that catering for tourists would either takeaway working hands from agriculture or would require employing hired workers.⁴⁶ When it was put to a vote, the assembly decided against opening a guesthouse.

But the appeal of the Dead Sea was such that the demand for health tourism forced the members of Ein Gedi to come up with some sort of supply to meet it. Sitting astride a tectonically active area, there are a number of hot springs on both sides of the Dead Sea.

One of these is situated a few kilometers south of the Ein Gedi oasis. In summer 1957 a group of women from Rehovot, a town near Tel Aviv, showed up unannounced and asked for some lodging and means of transport to reach the nearby hot springs. Uri Levitt, who was the Kibbutz Secretary at the time, recognized the economic potential and provided the women with rooms to stay in and a tractor to take them to the Dead Sea shore. “Levitt’s women,” as they were fondly called in the kibbutz, returned in the following summers until the assembly formally decided to establish a guesthouse.⁴⁷

By 1962 the guesthouse and the dining room of the kibbutz were able to serve 40 guests at a time. Because priority was still given to agriculture, the commitment of labor to the guesthouse, especially in wintertime, was kept to a minimum. Kibbutz members – invariably women – would clean the rooms ahead of the guests’ arrival, but during their one-week stay guests were expected to clean for themselves with the bucket and mop they were provided. Toward the end of the year, the assembly discussed a proposal to increase the guesthouse’s capacity so as to meet the growing demand: “it is believed that the Dead Sea has healing properties and because of that people come to bathe.”⁴⁸ Tourism was clearly on the rise as the kibbutz entered its second decade, a process that received a very significant boost following Israel’s victory in the 1967 Six-Day War and the conquest of the West Bank from Jordan.

With the West Bank under Israeli control, Ein Gedi was no longer a frontier settlement. The opening of road no. 90 in April 1971, connecting Metula in the north of Israel to Eilat in the far south, meant that Ein Gedi – almost exactly halfway between the two – was now far easier to access from and through Jerusalem. The impetus to complete the topographically most challenging section of the road along the northwestern coast of the Dead Sea reportedly came from a boat trip off Ein Gedi’s shore. Kibbutz member and archeologist Gideon Hadas served as captain of a boat borrowed from the Dead Sea Works plant. Hadas was joined by Bnayahu, officials from the Labor Ministry and engineer Dov Eisenberg, who later led the road’s construction. The chief problem that had to be overcome in the 31 km section along the Dead Sea were the rocks and cliffs that in certain places reached the shoreline of the day. Yigal Alon, then Minister of Labor, favored the project and allowed Eisenberg to employ 700 Palestinians from the recently occupied Gaza Strip so as to alleviate the economic hardship there. The works began in May 1968, making use of 24 Soviet-made tractors that were captured by the Israelis in Sinai during the Six-Day War. Once the road was open, Bnayahu remarked, Ein Gedi “in a way became a suburb of Jerusalem. It made life easier. But to say that Ein Gedi stopped having a culture of a stand-alone kibbutz, that I cannot say, this remained imprinted in the DNA of the kibbutz.”⁴⁹

Diversification

In line with broader changes in Israeli society, which included an erosion of the pioneering ethos, growing privatization and decreasing reliance on agriculture, the 1970s, 1980s and early 1990s saw the kibbutz attempt to diversify its sources of income.⁵⁰ Although there was an awareness already in the 1960s that the water resources at the disposal of the kibbutz may not suffice for all its needs, Ein Gedi nonetheless continued to experiment with growing different agricultural products, including crops that require plenty of water such as roses.⁵¹ However, by 1973–74 profits from roses were

stagnating with only tomatoes continuing to show a healthy return, fetching good prices until the end of March when plenty of produce from elsewhere flooded the market.⁵² By this stage, the relative advantages that Ein Gedi had enjoyed in its early years thanks to its hot winters began to diminish for two main reasons. First of all, in the Six-Day War Israel had captured various territories where the climate enabled growing vegetables early in the winter. Second, the increasing use of plastic tunnel greenhouses meant that other growers could emulate Ein Gedi's climate.

To offset the falling returns from vegetables, the kibbutz branched out to new avenues. Some of these were directly dependent on Ein Gedi's location, while others were not. The latter included growing turkeys for their meat and opening a photography development and processing facility, both in the early 1970s.⁵³ Also during this decade, the kibbutz sought to increase its earnings from the growing number of tourists coming to the Dead Sea. It opened a petrol station, campsite, tavern, bathing beach and other facilities near the lake.⁵⁴

By 1974, the kibbutz was earning more than 65% of its income from non-agricultural sources such as the guesthouse, the photographic development facility and the gas station.⁵⁵ Indeed, by the time the kibbutz celebrated its twentieth anniversary in 1976, it had stopped growing tomatoes. Only about 30% of its earnings came from some 350 dunams of vegetables, dates and mango. Meanwhile, the guesthouse had 68 rooms and was normally booked at an annual average of 95% of its capacity. Guests still cleaned up their own rooms and the kibbutz did not invest in advertising the guesthouse, relying instead on word of mouth.⁵⁶ The founders of the kibbutz had mixed feelings about the growing dominance of tourism-related income. For instance, in 1975 Arie Shahal reflected: "I didn't believe our hospitality branch would reach such dimensions. In my opinion it is very important that we know how to retain our special values in these branches, without [charging additional] fees and so on."⁵⁷

However, the 1980s saw a growth not only in demand from tourists, but also increased competition, with the construction of several new hotels near the Dead Sea at Ein Bokek, south of Ein Gedi.⁵⁸ Consequently, the socialist kibbutz developed increasingly capitalist practices in an effort to make use of the opportunities offered by the area around it. Ein Gedi began to market its tourism facilities in Europe, with representatives of the kibbutz meeting officials from the tourism ministries of Denmark, West Germany and Switzerland.⁵⁹ In 1984 Ein Gedi opened a new spa at the site of the hot springs near the kibbutz, a project that cost approximately \$4 million.⁶⁰ Another initiative that the kibbutz was involved in was the marketization of Dead Sea mud for both cosmetic and medicinal purposes. Ein Gedi had entered into a partnership with the entrepreneur Jacob Levi to package and sell Dead Sea mud, reputed for its health benefits, in the early 1970s.⁶¹ In the following decade the kibbutz began to collaborate with three newer kibbutzim, which were established near the Dead Sea after the Six-Day War, in producing cosmetic products on a larger scale. These were initially marketed under the brand Dead Sea Health Products, though in the mid-1980s the "exclusive line" of health and beauty merchandise was renamed AHAVA ("love" in Hebrew).⁶² Clearly, in the 30 years since it was founded, the environmental imaginary of the kibbutz had changed: from a site of revived ancient agriculture to one of rare natural beauty, offering a space for leisure and recuperation. The commodification and rebranding of the Ein Gedi area exemplify

broader trends that had gradually set in across the kibbutz movement. The pioneering and collective spirit was giving way to a capitalist and entrepreneurial ethos, heralding a process of privatization.⁶³

Ein Gedi not only benefitted from its environment but also played an active role in shaping it, perhaps most strikingly through its unique botanical garden. When the kibbutz was preparing to move from the oasis to the plateau south of Nahal Arugot, the new site was completely barren. In April 1959, a few months before the members relocated, some 80 date palms were planted there.⁶⁴ In the early 1960s other shade-giving trees were planted along with grass lawns, as was the practice in many other kibbutzim across Israel. If Ein Gedi differed, it was in the types of trees and bushes that were introduced to it. In December 1960, for instance, the kibbutz received a number of “desert trees” from the Institute for the Study of the Negev.⁶⁵ Among these were three young baobabs that, with time, grew to a considerable height and became one of the symbols of the kibbutz. Because of the unique, tropical-like climate of the oasis, several institutions in Israel wanted to test whether various plant species could adapt to the region and provided Ein Gedi with samples of plants originating from Australia, India, Madagascar, Africa, the Caribbean and the Americas. The horticulturalists of the kibbutz found plenty of space for these plants because the shade created by the taller trees killed off the grass in several places. Many of the plants did not adapt to the new location or the strict water regime, but some did. In 1985, the Ein Gedi horticulturalists formalized their relationship with Dr Michael Avishai of the botanical garden at the Hebrew University of Jerusalem. Avishai and other experts from Jerusalem oversaw a lengthy process of cataloging more than 900 different plant species across the kibbutz. Subsequently, Ein Gedi became a botanical garden in its own right. Covering 110 dunams, it is unique insofar as it encompasses a residential area. Though the botanical garden was initially intended for the benefit of the residents, it evolved into an economically self-sustaining endeavor. In the early 1990s, as more and more people began to come to the kibbutz to see this green and plant-filled island in the middle of the desert, the idea emerged to charge a small fee from visitors who wished to see the garden upon entering the kibbutz. Enthusiasts could also book a guided tour of the botanical garden.⁶⁶

In the early 1990s Ein Gedi was poised to expand its tourism facilities even further. In late 1992 the kibbutz assembly examined a proposal to establish a large-scale holiday resort with 225 rooms next to the oasis. However, the old aversion to over-reliance on tourism had not yet disappeared. One member submitted a written objection in which he argued the proposal was driven by “megalomania [and] ambition,” adding that it was “an all-or-nothing gamble and a complete renunciation of the kibbutz values.” He pointed out that the tourism industry was susceptible to external fluctuations, citing the 1990–91 Gulf War as an example. To ignore potential downturns “is comparable to making profitability calculations for growing wheat based only on years with plentiful rain.” He also reminded the assembly that the kibbutz had a prior 60 million Shekels debt to contend with. The objection concluded with the suggestion that the kibbutz should continue to rely on agriculture and on the existing tourism facilities.⁶⁷ The assembly decided that a committee for tourism planning would develop the proposal and bring it to the assembly for approval. However, the proposal to construct a new resort was eventually abandoned because further development along the Dead Sea shore became untenable, as we shall see.

Crises and adaptation

In recent decades Ein Gedi has faced three major challenges: a socio-economic crisis, a public relations fiasco, and an environmental disaster. The financial crisis surfaced first and was not unique to Ein Gedi. In fact, it affected nearly all the kibbutzim in Israel. From the mid-1980s onwards, several kibbutzim across the country entered a prolonged period of financial and social crisis as a result of imprudent investments decisions, mismanagement and decreasing governmental support following attempts to halt rampant inflation.⁶⁸ In December 1989 the various kibbutzim movements, the government, and the banks signed the first of a number of agreements that saw the spreading of repayments over a 25-year period with some of the debts written off. Ein Gedi did not fare as badly as some kibbutzim, but it was still straddled with a very substantial debt. Standing at approximately ₪60 million Shekels in 1992, it still owed Leumi Bank 29,531,634 Shekels in March 1998.⁶⁹ Like in many other kibbutzim, the economic crisis was accompanied by a social one, with several members choosing to leave Ein Gedi. The number of full members, which had risen fairly consistently since 1960 and reached a peak of 263 in 1987, began to decline. By 2009, it had fallen to 184 (see [Figure 1](#)).

The response to the economic crisis in Ein Gedi was similar to those adopted in other kibbutzim. The community had to let go of some of its assets such as its shares in AHAVA.⁷⁰ At the same time, the kibbutz relinquished much of its remaining socialist ethos. Like so many other kibbutzim, it began to undergo a lengthy process of privatization. Kibbutz members started to receive differentiated salaries instead of the equal personal “budget” each individual was entitled to in previous decades. Gradually, members also acquired ownership of the homes they lived in, which were formerly in the possession of the community. Furthermore, the kibbutz increasingly came to rely on hired workers.⁷¹

While the socio-economic crisis from the late 1980s onwards was shared by many kibbutzim across Israel, Ein Gedi also suffered from problems unique to its location. One of these problems was of the kibbutz’s own making, a byproduct of the initiative to bottle

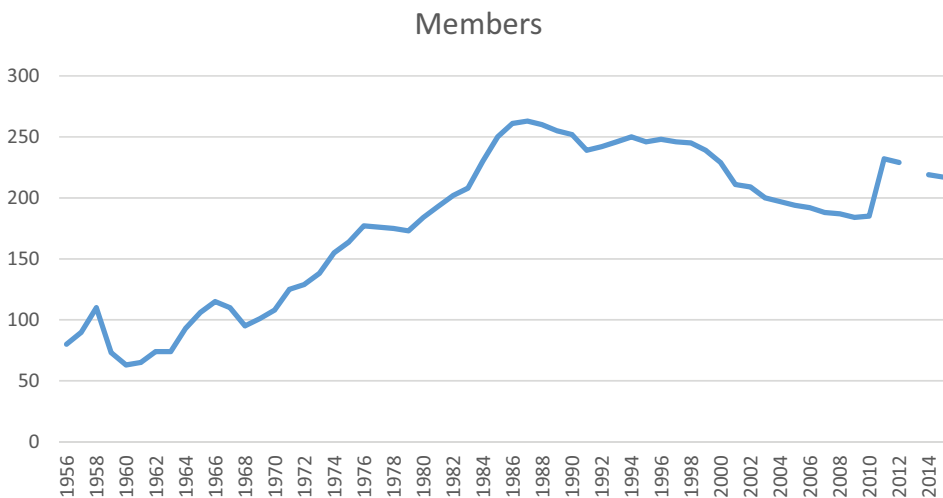


Figure 1. Number of full members of Kibbutz Ein Gedi, 1956–2014.

spring water and establish Ein Gedi Mineral Water Company Ltd. Arguments about how best to use the freshwater around Ein Gedi long predated the lucrative water-bottling plant. As early as 1955, tests had shown that the quality of the water in the springs feeding Ein Gedi's oasis was superior to that of any other spring on the western side of the Dead Sea.⁷² Water drawn from the springs in the oasis was used either for consumption in the kibbutz itself or to water its crops, a practice that was frowned upon by the nascent Society for the Protection of Nature in Israel.⁷³ Indeed, the tension between the needs and aspirations of the kibbutz and those of the Society were never fully resolved, even after Nahal Arugot and Nahal David were declared nature reserves in 1968.

In the 1990s the kibbutz saw an opportunity to benefit from the growing demand in Israel for healthy food and beverages. The establishment of a mineral water bottling plant in partnership with the company Jafora was first discussed by the kibbutz assembly in late 1994. The proposal met with only minor opposition, confined to the exact location of the plant and to whether its design would fit the surrounding oasis. Eventually, a majority of 122 to 1 voted in favor. Water was to be brought down through pipes from the uphill Ein Gedi and Sholamit springs, and the bottled-water plant was to be built where greenhouses once stood in the oasis, close to the site of the original 1950s settlement.⁷⁴ It began to operate in early 1997 and, by 2017, held 34% of the national bottled-water industry and was making an annual profit of around 10 million Shekels.⁷⁵ Water that had been used to grow peppers in the 1950s was now bottled. Rather than helping to produce products associated with the Ein Gedi area, the water of the oasis became a commodity in its own right.

Ein Gedi's mineral water plant provoked criticism beyond the kibbutz. In 2001 *Haaretz* journalist Neri Livneh published an article decrying that "while kibbutz Ein Gedi flourishes, the springs around it dry up and the unique nature reserve is dying." She contrasted the beautiful botanical garden in the kibbutz and the dried up vegetation around the springs feeding the oasis below. The article cited wildlife expert Uzi Paz who was critical of the kibbutz drawing water directly from one of the springs – Ma'ayan Ein Gedi – instead of doing so downstream.⁷⁶ The controversy did not end there. In 2006, the Society for the Protection of Nature launched a public campaign to prevent Ein Gedi's mineral water plant from drawing more water from the springs in the oasis. In 2017 well-known songwriter Yankele Rotblit published "Who Killed the Dead Sea?," a song which sought to raise public awareness of the plight of the lake. It includes the sentence "Nahal Arugot is being marketed in bottles."⁷⁷ Even a sympathetic observer such as journalist Yoram Gabison noted that "it is difficult to miss the irony in the fact that a kibbutz, which suffers from acute water shortage, exports water to parts of the country that receive ten times the rainfall that Ein Gedi does."⁷⁸

The kibbutz categorically rejects the criticism that is leveled against the way it uses the water resources around it. The December 12, 2014 issue of *Afik*, for instance, pointed out that the bottled water is deducted from the annual quota that the kibbutz had been granted in agreements with the government. Moreover, in 2007 a further agreement was signed between the kibbutz and the Nature and Parks Authority which stipulated that water running down Nahal Arugot and Nahal David would be allowed to flow almost their entire course, for the benefit of the nature reserve, before being siphoned. The kibbutz also undertook to draw water from Nahal Arugot and to bring it up to Ma'ayan Ein Gedi for the Nature and Parks Authority to use as it sees fit.⁷⁹ In other words, the

kibbutz draws water fit for bottling directly from Ma'ayan Ein Gedi and partly compensates for it by bringing up water that has already flowed through the nature reserve (and is no longer fit for drinking) to maintain the vegetation near the spring. A section dedicated to water in Ein Gedi's local museum declares that "Construction of the water factory in Ein Gedi, in the early nineties, has significantly reduced the amount of drinking water available to the kibbutz and thus requiring the construction of a plant for the filtering of water from the streams to be utilized for drinking." It also points out that "wastewater in the Ein Gedi area is treated and used to irrigate the date groves."⁸⁰ Similar arguments were put forward by individuals interviewed for this article. One of these, historian Neri Erely, pointed out that even in Roman times – as ancient texts discovered in a cave a few kilometers from the kibbutz show – there was a clear distinction between "spring water" for human consumption and "river water" for irrigation.⁸¹

The final crisis Ein Gedi has faced since the 1990s has very few parallels in Israel. It resulted from decisions that were made far away from the kibbutz and a long time before their results were felt. The amount of water reaching the Dead Sea began to drop substantially in the 1960s. A terminal lake, its central tributary had always been the Jordan River. However, damming and diversion upstream – the Degania Dam at the southern end of the Sea of Galilee that enables Israel to draw water for its National Water Carrier, and the diversion of water from the Yarmouk River by Jordan to feed the East Ghor Canal (later renamed King Abdullah Canal) – meant that the Dead Sea lost the vast majority of its intake. The level of the Dead Sea began to drop from –395 meters below sea level in the late 1970s to –433 meters at the time of writing, with an average loss of more than a meter expected every year. The decline is exacerbated by the Dead Sea Works plant drawing water from the deeper northern basin of the lake and conveying it to the shallower southern basin, which is sustained artificially in order to assist in the extraction of potash and other minerals.⁸²

The hydrological crisis of the Dead Sea created an acute geological problem: sinkholes. Underground clusters of salt sediments, which were kept in place by the lake's highly saline water as long as its level was stable, began to erode as fresh water from the surrounding hills flowed deeper underground before reaching the Dead Sea. As a result, the earth formerly supported by underground salt clusters began to collapse. The first sinkhole appeared on the southwestern shore of the Dead Sea in the 1980s. Geologist and Ein Gedi kibbutz member Eli Raz was one of the first to understand the link between the receding level of the lake and the formation of sinkholes. He warned that the sinkholes would soon endanger both the infrastructure and the tourism industry along the entire Dead Sea coast. However, like the mythological Cassandra or the biblical prophet Jeremiah, his predictions were ignored at first by the regional council.⁸³

The sinkholes started to threaten the livelihood of Ein Gedi in the late 1990s when, in two separate incidents, people fell into newly formed holes: one in the kibbutz's campsite and another in one of its date palm groves. By the early 2000s, with the appearance of hundreds of sinkholes annually, the kibbutz felt under threat from potential lawsuits following injuries and damage to property. It was forced to abandon its petrol station, campsite, tavern, and several dunams of date palms.⁸⁴ In 2015 road no. 90 had to be permanently diverted to a roundabout route in the oasis because of the sinkholes. A recently completed bridge, which had been constructed at a cost of 50 million Shekels to replace an older bridge destroyed by a flood in 2001, was deemed unsafe. It

too was abandoned.⁸⁵ Ein Gedi also incurred reputational damage because of the sinkholes. The kibbutz managed a solarium beach for psoriasis patients who, thanks to the altitude of the Dead Sea more than 400 meters below sea level, could sunbathe with reduced ultraviolet radiation (particularly UVB) exposure. Many of these patients came from Denmark. However, in 2006 the Danish government issued a travel warning, advising against staying in the Dead Sea area and terminated its agreement with Ein Gedi. The spa facility at the site of the hot springs was also adversely affected by the receding Dead Sea. When the new building was opened in the mid-1980s it was still near the shoreline. In 2017, visitors at the spa who wished to bathe in the lake had to be transported with a vehicle over a distance of more than 1.3 km. Moreover, the route between the spa and the shoreline was believed to be under threat from new potential sinkholes.⁸⁶ The spa was closed in spring 2020 and remains shut at the time of writing.

The physical changes in the environment have forced Ein Gedi to reconceive its image as a holiday destination. In 2021 Tom Geva, the manager of Ein Gedi's hotel (that replaced the guesthouse of the 1960s), told *Haaretz*:

The sea is far less meaningful in the package that we offer [today]. They don't come to Ein Gedi for the Dead Sea. In our area there is no access to the sea because of the sinkholes and because of the fast retreating shoreline. Realistically, I try to construct an array of content that would allow an audience that won't find the sea to come [here] and to enjoy [themselves].⁸⁷

Beyond adapting its tourism offer, Ein Gedi undertook a long and vigorous campaign, already underway in 2003, for compensation from the government for the many problems created by the sinkholes. Their chief claim was that the kibbutz was not responsible for state-level decisions that led to the drying up of the Dead Sea and therefore should not be forced to bear the brunt of the economic consequences. As part of this campaign, Ruti Lior, the Kibbutz Chairperson, wrote to the President of Israel in late 2017, asking him to influence decision makers, and adding “we love the place [and] and we think we have built a unique gem that we are very proud of.”⁸⁸ The kibbutz also hired the services of a former Knesset (parliament) member to work as a lobbyist on its behalf. Government ministers and Knesset members came to Ein Gedi to observe the situation and show their support. After lengthy efforts, the kibbutz received assistance from the regional council and the Construction and Housing Ministry in creating a new residential area with temporary houses for families wishing to join the community. It was also granted 600 dunams to grow date palms further south, not far from Masada. By 2019, the kibbutz had received all the necessary authorizations to class the dates from the new grove as organic.⁸⁹ Ironically, dates remain a big earner for the kibbutz, just as these were the main agricultural product grown in ancient Ein Gedi.

The community and its changing environment

In early 1956 Amotz Zahavi, one of the founders of the Society for the Protection of Nature in Israel, argued that “there is no doubt that an agricultural settlement should be established in Ein Gedi, but its scenery and environment could provide the settlement economic opportunities with earnings that would not fall short of those coming from its fields.”⁹⁰ As the previous sections have shown, Zahavi's prediction proved to be well

founded. For instance, today the kibbutz runs the shop at the entrance to the Nahal David nature reserve, making an annual profit of about 1 million Shekels⁹¹ Kibbutz Ein Gedi, therefore, remains heavily dependent on its environment. Unlike many other *kibbutzim* that see most of their profits coming from factories, which could have been established elsewhere and do not depend on the location of the kibbutz for their very existence, Ein Gedi derives most of its income from economic activities that are directly tied to the nearby oasis, the Dead Sea and to its climate more broadly.

The microhistorical approach enables us to shed light on how the relationship of a small community with the surrounding environment has transitioned over time. As we have seen, such relationships can be understood as a combination of a community's environmental imaginary and its efforts to manage its surroundings. By way of generalization, Ein Gedi's relationship with its environment passed through three phases. First, in the 1950s and 1960s, the NAHAL settlement and the kibbutz that replaced it sought to re-shape the oasis and to revive the agricultural settlement that had flourished there in ancient times. At the same time, the settlers wanted to modernize the area in order to maximize the amount of arable land – by digging a canal to drain Nahal Arugot, for instance – and to make transport and communication with the rest of the country easier by campaigning for roads to be paved south (1962) and north (1968–1971) of the kibbutz. Second, from the 1970s to the 1990s, Ein Gedi increasingly began to capitalize on its location next to the Dead Sea in general, and especially its proximity to the hot springs and the nature reserves in the oasis. This was done through the establishment of a campsite, petrol station, tavern, solarium beach and a spa as well as through the growing popularity of its guesthouse-turned-hotel. The shift was not prompted by a drastic alteration in environmental conditions, but emanated instead from a change in values that drove the kibbutz to utilize the natural resources around it in different ways.

The first two phases – the transition from a pioneering ethos to an entrepreneurial one – are emblematic of a broader change in Israeli society during the period between the 1950s and 1990s.⁹² However, because of its proximity to the receding Dead Sea, Ein Gedi has experienced a third phase of acute environmental awareness, a phase that has not yet affected most other communities in Israel. Owing to earlier human interventions upstream, which have greatly altered the catchment area of the Dead Sea, the kibbutz began to lose some of its agency from the late 1990s onwards. The physical environment, hitherto difficult to manage but ultimately malleable, began to change rapidly, forcing the community to adopt a responsive approach. The retreating Dead Sea shoreline and the appearance of sinkholes have stripped the kibbutz of a sizable portion of its touristic assets and date palm groves. Ein Gedi's microhistory provides a poignant example of how a “change made by humans in the environment virtually always redounds” and generates change in social conditions.⁹³

Ein Gedi's predicament is less unique when placed in a global context in which several other lakes have receded as a result of the construction of dams, diversions of rivers, and increased water consumption. The environmental crisis that Ein Gedi is facing is not as severe as that which Muynak in Uzbekistan encountered. Formerly a port city on the Aral Sea, Muynak is now some 70 km away from the shoreline, its fishing industry annihilated. The northern basin of the Dead Sea is deeper and much smaller than the Aral Sea, so the decline in its water volume has not been as intense.⁹⁴ Nonetheless, the difficulties

that Ein Gedi's tourist industry encountered are comparable to those of Golma Khaneh, a formerly touristic village on the western shore of Lake Urmia in Iran. After the lake receded tourism collapsed and many of the village's 500 inhabitants – especially the young – moved to urban areas to find work.⁹⁵ This comparative glance at other declining saline lakes provides a humbling lesson: between the 1950s and 1990s Kibbutz Ein Gedi held fervent discussions about how best to utilize the unique landscape and freshwater around it; meanwhile nothing was done to prepare the community for the Dead Sea's demise – a slow-onset disaster which, like the retreat of Lake Urmia, was decades in the making. There is a useful reminder in this microhistory for historians as well: in our focus on political, social, cultural and economic change, we must not lose sight of the ever-present and at times decisive impact of the environment.

Today, the kibbutz endures thanks to the solidarity of the community, its reliance on diverse sources of income and a degree of governmental support, for instance in the form of new land to grow date palms. As the manager of its hotel explained, Ein Gedi has largely given up on the Dead Sea. Instead, the botanical garden and the wildlife in the neighboring nature reserve have become central tenets in the self-image and “environmental imaginary” of the kibbutz. There are voices in Ein Gedi who offer an optimistic outlook, with which it would be fitting to end. “I think the community has gone through the difficult years of shock from the sinkholes and today these are part of [our] considerations,” says Merav Ayalon, a local civics and history teacher. “The kibbutz has the potential to grow demographically and economically, if only we internalize who we are and don't try to be what we aren't.”⁹⁶

Notes

1. Hirschfeld, *Ein Gedi*, 7; Hadas, “Ancient agricultural irrigation,” 75–81. Thus far, research on Ein Gedi has largely been restricted to archeological studies of ancient settlements in the area and to scientific examinations of the region's sinkholes and sedimentary record. See, for instance: Hadas, “Where was the harbor of Ein Gedi,” 45–49; Migowski et al., “Holocene climate variability,” 421–31.
2. Cited in: Goren, *Dead Sea Level*, 139.
3. Wilson, *The Land of Judea*, 142.
4. Lewinsky, *Masa le-Eretz Yisrael*, 44.
5. The lyrics were written by Eitan Peretz. The kibbutz bulletin, *Afik*, published the words of the song and the story of its authors on July 17, 1959 [all *Afik* references are in Hebrew].
6. Davis, “Imperialism, orientalism, and the environment,” 3.
7. See, for instance: Mitchell, “Afterword,” 265–74; Sutter, “The Tropics,” 178–206; Lawhon, Pierce and Bouwer, “Scale and the construction,” 1–21.
8. For work on ideology and land-use change in other geopolitical contexts, see: Peterson, *Pipe Dreams*. Local studies include: Cohen, *The Politics of Planting*; El-Eini, *Mandated Landscape*.
9. Micklin, “The Aral Sea disaster,” 47–72; Ženko and Uležić, “The unequal vulnerability,” 167–83.
10. See, for instance: Arkin and Gilat, “Dead Sea sinkholes,” 711–22; Ezersky et al., “Geophysical prediction,” 1463–1478; Taqieddin, Abderahman and Atallah, “Sinkhole hazards,” 1237–1253; Royal HaskoningDHV and EcoPeace Middle East. “National Master Plan for the Jordan Valley.”
11. Ben-Dror, “The Armistice Talks,” 887.

12. Recorded testimony of Shmarya Guttman, undated, Ein Gedi Archives [hereafter EGA]; “Kta'im mi-teur kibbush Ein Gedi” [Selection from the description of the conquest of Ein Gedi], *Afik*, May 14, 1967; Navon, *Mivtza Lot*, 48.
13. Eli Meishlish's testimony, “al Ein Gedi be-shnat 1951” [On Ein Gedi in 1951], [no date], EGA.
14. Kreiger, *The Dead Sea*, 173; Hadash, *Ein Gedi: Yoman shlihut*, 23–25.
15. Almog to Weitz, November 13, 1951, Central Zionist Archives [hereafter CZA], KKL5/20276.
16. In practice, many NAHAL settlers did not stay on in the settlements they established once their military service was over.
17. NAHAL Command HQ, “Kovetz Ein Gedi le-yom aliyat heahzut ha-NAHAL 5” [Ein Gedi file for the founding day of NAHAL settlement 5], February 26, 1953, EGA.
18. For more on NAHAL in the 1950s, see: Kemp, “Medabrim gvulot,” 70–95.
19. Tager to Bakstansky, February 16, 1954, CZA, KH4/12391. More than other NAHAL settlements, this new frontier stronghold in the desert captured the imagination of funders from Britain. They raised considerable sums of money for Ein Gedi.
20. Alexander and Dunkel, “Local malaria elimination.”
21. Almog to Weitz, May 15, 1953, CZA, KKL5/20276.
22. The author's interview with Arie and Dalia Shahal, Ein Gedi, December 13, 2019; testimony of Amos Ganor, no date, EGA.
23. Weitz to Kahanovitch, April 28, 1955, CZA, KKL5/21945; Weitz to Ben Porath, March 2, 1956, CZA, KKL5/23554; *Afik*, January 15, 2016, 9–10; The author's interview with Arie and Dalia Shahal, Ein Gedi, December 13, 2019.
24. Palgi and Getz, “Varieties in developing sustainability,” 38–9.
25. “Bereshit” [In the beginning], *Tziyonay derekh* [marks along the road], January 10, 1956, EGA.
26. Tal, “Enduring technological optimism,” 283.
27. “Kav ha-mayim [The water line],” *Afik*, August 29, 1958; *Afik*, December 26, 1958.
28. Davis, “Restoring Roman nature,” 64.
29. Arieijeh was the transliteration used by Claude Conder in 1875 during the PEF survey of Palestine. See: Palestine Exploration Fund Archives, M/WS/155/2.
30. The map showing the new Hebrew names of the valleys west of the Dead Sea was published by the Governmental Names Committee on April 4, 1959 and was included in the April 27, 1959 issue of *Afik*. For more on the national effort to give Hebrew names to geographic features in Israel, see: Benvenisti, “Ha-mapa ha-ivrit,” 7–29.
31. In 1960 and 1961 kibbutz members still used the Arabic name *Sdeir* occasionally, but eventually the new designations caught on. Cfr: *Afik*, March 11, 1960; *Afik*, September 6, 1961; *Afik*, November 17, 1961.
32. Ron, *Dvarim sh-eainam*, 11.
33. Testimony of Amos Ganor, no date, EGA.
34. The author's interview with Ruti Ron, Ein Gedi, December 12, 2019.
35. Ron, *Dvarim sh-eainam*, 19.
36. Tal, “To make a desert bloom,” 235–6.
37. “800 dunam yuhsheru be-Ein Gedi” [800 dunams to be prepared in Ein Gedi], *La-merhav*, January 11, 1957, 9.
38. “The history of the water of the Jordan Valley,” Jordan Valley Water Association, <https://www.jvwa.co.il/>. Accessed February 20, 2023.
39. NAHAL Command HQ, “Kovetz Ein Gedi,” 8.
40. Dan Bnayahu, “Tahshiv hashvaati byin karka tova ve-avanim be-Ein Gedi” [Comparative analysis between good soil and rocky soil in Ein Gedi], April 13, 1967, EGA, box A-16; the author's interview with Arie and Dalia Shahal, Ein Gedi, December 13, 2019.
41. Ezra Henkin to Ein Gedi, December 24, 1964, EGA, box A-16.
42. Bnayahu to Eshel (Agricultural Ministry), July 13, 1967, EGA, box A-16.

43. Henkin to Ein Gedi, December 24, 1964; “Hatz’a le-yetzirat karka le-giduley yetzu” [Proposal for the creation of soil for export corps], January 10, 1967; Bnayahu to Eshel, July 13, 1967, EGA, A-16.
44. Blass, *Mei meriva*, 342–44; recorded conversation between Bnayahu and Y. Blass, Ein Gedi, 23 November 2011, Ein Gedi Archives website: <http://www.eingedi.co.il/viewpage.asp?pagesCatID=2540&siteName=eingedi>. Accessed February 20, 2023.
45. “Alon meyuhad li-khvod kenesh shdamot” [special newsletter in honor of the Shdamot conference], *Afik*, July 4, 1975.
46. “Be-ad o neged pitoah ha-margoa ba-ezor” [for and against developing leisure in the area], *Afik*, September 8, 1956.
47. *Afik*, 11 September 1959; October 20, 1959; Levitt, *Ahuv libainu: Uri Levitt*, 13–4.
48. “Beit haaraha Ein Gedi – skira ve-tokhnit le-harhava” [Ein Gedi guesthouse – overview and expansion plan] December 22, 1962, EGA, box A-22: Beit Havraa 1959–1971. For more on the guesthouse experience in the 1960s, see: “Beit haaraha Ein Gedi” [Ein Gedi guesthouse], *Davar*, June 23, 1967, 28.
49. Nir Hasson, “40 shana le-kvish Yam Ha-Melah, ve-hateva meayem le-haslu” [40 years to the Dead Sea road, and nature threatens to destroy it], *Haaretz*, April 10, 2015, <https://www.haaretz.co.il/misc/1.1198422>. Accessed February 20, 2023.
50. Hasson, “Dmut ha-aretz be’atid,” 82; Efrat, “National land,” 171.
51. Cfr. *Afik*, August 8, 1960; *Afik*, October 27, 1972.
52. *Afik*, June 1, 1973; “Yerida be-mehirey ha-yerakot” [Drop in vegetable prices], *Davar*, April 1, 1974, 4.
53. *Afik*, October 3, 1972; *Afik*, October 27, 1972; August 3, 1973.
54. “10 million L.I. hushke’u be-hakamat henyon Ein Gedi” [10 million Israeli Liras invested in constructing a campsite in Ein Gedi], *Davar*, 12 December 1977, 4.
55. *Afik*, November 1, 1974.
56. Meshulam Ad, “Hag ha-20 le-Ein Gedi” [Ein Gedi’s 20th anniversary], *Davar*, March 5, 1976, 17.
57. *Afik*, July 4, 1975.
58. “Tokhnit homesh le-pitoah ha-tashtit le-tayarut be-ezor Yam Ha-Melah” [Five-year plan to develop tourism infrastructure in the Dead Sea area], *Maariv*, February 12, 1981, 4; summary by Amos Ganor, April 2, 1982, EGA, Assembly Protocols.
59. Report on sales by Moshe Shamir and Gady Hofesh, October 24, 1983, EGA, file: “Beit haaraha: pirsom meyda ve-hodaot, 1970–1986” [guesthouse publicity, information and notifications 1970–1986].
60. “Ba-hodesh ha-ba yehanekh ha-mivneh ha-hadash shel chamey Ein Gedi” [Next month the new Ein Gedi spa building will be inaugurated], *Maariv*, February 8, 1984, 31; Schein and Gavish, “Briut ve-yofi” [Health and beauty], 86–128. The new building replaced the rudimentary spa that was established in the 1960s, after a dispute between the kibbutz and various state institutions about the right to use the hot springs had been settled.
61. *Afik*, March 16, 1973.
62. Schein and Gavish, 118–20.
63. Gan, “From ‘we’ to ‘me,’” 33–46.
64. *Afik*, April 17, 1959.
65. *Afik*, Hanukah issue, December 1960.
66. Meni Gal, “Gan botani be-lev midbar” [A botanical garden in the heart of the desert], Kibbutz Ein Gedi website, <http://www.eingedi.co.il/viewpage.asp?pagesCatID=3386&siteName=eingedi>. Accessed February 2023; Eli Ron, Nitza Hofesh, and Anat Raz, Summary of the history of the planning of the botanical garden in Ein Gedi, [no date], EGA.
67. “Li-krat aseifa” [Ahead of the assembly], December 4, 1992, EGA, Assembly Protocols.
68. Lapidot, Applebaum, and Yehudai, “The Kibbutz,” 7–27.
69. Copy of Agreement between Leumi Bank and Ein Gedi, 24 June 1998, EGA, Assembly Protocols.
70. Schein and Gavish, 126.

71. For an overview of responses in various kibbutzim to the socio-economic crisis, see: Palgi and Getz, "Varieties in developing sustainability," 38–47.
72. Amiel (Weizmann Institute) to Atzmon (Development Ministry), November 6, 1955, Israel State Archives (ISA), P-1900/27.
73. Zahavi to Almog, January 22, 1956, ISA, P-1900/27. Ein Gedi Spring (*Ma'ayan Ein Gedi*) emerges from a hill overlooking the oasis. Water was originally drawn from several meters downhill, allowing lush vegetation to grow around it. However, by 1963, thousands of visitors per year were frequenting the oasis. As a result, the water became too contaminated for consumption. The kibbutz therefore laid a pipe connecting directly to the mouth of the spring. To allay the concerns of the Society for the Protection of Nature, efforts were made to ensure enough water flowed down from the spring to sustain the natural vegetation. *Al Hamishmar*, June 27, 1963, 4.
74. Arie Shahal, "Mey Ein Gedi [Ein Gedi Water]," November 22, 1994; assembly protocol, November 26, 1994, EGA, Assembly Protocols.
75. Yoram Gabison, "Ha-bol'an ha-6,001: Ha-yishuv ha-rishon be-Yisrael she-alul lipol biglal ason ecologi" [The 6001th sinkhole: the first settlement in Israel that may collapse due to an ecological disaster], *The Marker*, May 1, 2017. <https://www.themarker.com/allnews/2017-05-01/ty-article/0000017f-e025-d3a5-af7f-f2af51e90000>. Accessed February 20, 2023.
76. Neri Livneh, "Kalu hamayim" [The water ran out], *Haaretz*, June 20, 2001, <https://www.haaretz.co.il/misc/1.710955>. Accessed February 20, 2023.
77. "'Ha-Hevra Le-Haganat Ha-Teva neeveket al atid Ein Gedi" [the Society for the Protection of Nature is fighting for the future of Ein Gedi], *Walla*, April 4, 2006. <https://news.walla.co.il/item/889353>. Accessed February 19, 2023; Song: "Mi harag et Yam Ha-Melah?" [Who Killed the Dead Sea?], April 30, 2017. <https://www.youtube.com/watch?v=9J8GpSRGduc>. Accessed February 19, 2023.
78. Gabison, "Ha-bol'an ha-6,001."
79. Yochai Ross, "Ein Gedi mayim mineralyim [Ein Gedi Mineral Water]," *Afik*, December 12, 2014.
80. The texts for the exhibit were written by kibbutz member Ayala Gilad.
81. The author's interview with Neri Erel, Ein Gedi, December 12, 2019. For more on the regulation of irrigation at Ein Gedi, and around the Dead Sea more broadly, in the first and second century CE, see: Yadin, *Bar Kokhba*, 181, 235–37.
82. For more on the causes that led to the receding level of the Dead Sea, see: Lipchin, Sandler and Cushman (eds.), *The Jordan River*.
83. Shai Gal's interview with Eli Raz in "Bol'ananim be-Yam Ha-Melah" [Dead Sea sinkholes], *Channel 2 News*, October 29, 2012, <https://www.youtube.com/watch?v=bR2k2wbSBcA>. accessed February 19, 2023; Oriel Danielson's interview with Eli Raz in "Yam Ha-Melah kfi she-lo raitem oto me-olam" [The Dead Sea like you've never seen before], *Kan*, November 1, 2017, <https://www.youtube.com/watch?v=3TpK-YMQ48o>. Accessed February 19, 2023.
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87. Moshe Gil'ad, "Brukhim ha-baim le-eret ha-bol'anim" [Welcome to the land of the sinkholes], *Haaretz*, June 20, 2021, <https://www.haaretz.co.il/gallery/trip/.premium-MAGAZINE-1.9922242>. Accessed February 20, 2023.
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89. Gabison, "Ha-bol'an ha-6,001;" *Afik*, December 8, 2017; *Afik*, November 1, 2019.
90. Amotz Zahavi, "Maskanot va'adat ha-shmurot shel ha-hevra mi-bikoret be-Ein Gedi [Conclusions of the Reserves Committee of the Society from its visit to Ein Gedi]," January 11, 1956, ISA, P-1900/27.
91. See note 78 above.
92. Elmaliach, "The demobilization," 123–46.
93. Hughes, "Three Dimensions," 321–2.
94. Wurtsbaugh et al., "Decline of the world's saline lakes," 816–21.
95. Schmidt et al., "Environmental degradation," 2157.
96. E-mail correspondence with the author, December 18, 2020.

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