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A Grave Shortage and the Coming Wave of the Dead

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A Grave Shortage and the Coming Wave of the Dead

Alex Weinreb

Introduction

The challenges that Israel's population growth poses to its burial practices have long been recognized. In a series of publications — relatively short and focused reports in 1999 and 2009, a comprehensive survey in 2020, and a follow-up in 2024 — the State Comptroller (SC) has repeatedly pointed to the need for more cemeteries, and for existing cemeteries to increase their capacity. Similar points have also been raised by the Knesset research department (Ronen, 2009; Troen, 2025) and, less formally, in journalistic coverage (e.g., Alexander, 2026; Horodnitchano, 2019; Roichman, 2021).

Despite this recurrent attention, planning in Israel's burial sector remains fragmented and largely short-term. There is no direct reference to the effects of population growth on the amount of land required by cemeteries in any recent amendment to the 1971 Law of Jewish Religious Services, the primary legislative basis for burial practices in Israel.[1] Instead, these amendments typically deal with regulating pricing of burial plots (e.g., Amendment 8, 1995 ([2358]; Amendment 18, 2012 [2362]) and with setting formal thresholds for the share of burials that are supposed to use more *high-density* methods. These two are related. What cemeteries earn from more prized burial spots or types of burial is supposed to fund higher-density burial infrastructure for future needs. We discuss this below, in addition to the very slow progress made on these issues in actual burial practice.

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1 The 1971 law built on a 1940 British Mandate "Public Health Rule" that included the regulation of burial as part of a series of public health steps, including water and dairy sanitation, registration of medical institutions, and the environment.

The relative lack of central government involvement in cemetery planning, also a regular theme in the SC's coverage of this issue, reflects longstanding community autonomy when it comes to burial. Notably, although National Insurance obligates the state to fund burial in a place close to the deceased's place of residence, actual responsibility for burial and for cemetery planning is assigned to local authorities and, through them, to other organizations.[2] These are typically local religious bodies, though since the passing of the "The Right to an Alternative Civil Burial Law" in 1996, that has also included non-religious bodies. As a result of this community-based approach, as of 2024 there were 1090 cemeteries in Israel — up from 940 active cemeteries in Israel in 2019 (State Comptroller, 2020) — with 455 organizations charged with organizing the burial (State Comptroller, 2024).[3] More relevant to planning, the Ministry of Religious Services, which is formally charged with overseeing this sector, has no updated data on the amount of used burial spaces or available spaces (State Comptroller, 2009; 2020; Troen, 2025). Nor does it have *any data on the anticipated demand for burial over the next few decades*. We know this because in March, 2024 we submitted a request to the Ministry for any such data. Their response was: "The Ministry of Religious Services does not have mortality projection data [...] At this stage, the Ministry does not have the requested data." It then offered the option of approaching cemeteries around the country for the information.

The Ministry of Religious Services is not alone in lacking data or even estimates of the anticipated demand for burial services. The Knesset report (Ronen, 2009) does not include such estimates. The SC provides some, but as we show below, they substantially underestimate the coming wave of mortality and, therefore, the magnitude of future demand for burial sites.

The central contribution of this paper is to fill this gap by providing a more solid empirical basis for burial policy in Israel. We present estimates of the anticipated number of deaths in Israel over the next 25 years, including by district. Our key point here is that over the next two decades, in particular, Israel will experience

2 According to the State Comptroller, burial associations are sometimes organized as non-profit organizations and sometimes as companies, and there are also religious councils that provide burial services (State Comptroller, 2024).

3 State Comptroller (2020) reports that there were 580 licensed burial organizations in Israel, with tens of others operating without a valid license, in part because of the bureaucratic hurdles.

a much larger wave of deaths — and annual growth in the number of deaths — than it has experienced in the past. That coming wave, a product of Israel's peculiar age structure, will severely challenge local authorities' ability to fulfill their burial-related obligations. It will also challenge planning at the national level since, to state the obvious, land in Israel is becoming increasingly scarce and valuable, and that cost is not formally taken into account in burial planning.

We also provide more long-term national estimates — not by district, given the uncertainties about internal migration — up to the end of the 21st century. Our hope is that they help anchor discussions about planning and serve as a baseline for future work on this topic.

This paper is also intended to make a secondary contribution. In summarizing burial practices in other high-income countries whose aging populations have also led to sharp increases in the annual number of deaths, we show how unusual Israeli burial policy is, and how ineffective and short-sighted most of the proposed solutions are. In this context, we add to the SC's own work, which in its most recent report points to the substantial variation in price between different types of burial. We draw particular attention to *Land of Israel Burials* since these appear to offer the optimal balance between ecological and financial cost within *halachically* acceptable constraints. Realistically, those constraints, and their parallels in Islamic law, will continue to guide burial practice for the vast majority of Israel's population.

The paper has five main sections. In the first, we review the SC's existing estimates of the projected number of deaths in Israel between now and the end of the century. In the second, we review how unusual Israeli burial policy and practice is in relation to other high-income countries. Sections 3 and 4 are the empirical heart of the paper. In section 3, we present our own estimates of likely number of deaths between now and 2050, nationally and by district, and then extend our national estimates to the end of the century. In section 4, we review current Israeli burial practice and lay out the financial cost and land cost of different combinations of burial methods. Section 5 then ends with a brief survey of other imagined futures, including three alternative policy approaches.

1. Background

Three factors underlie the challenges that Israel's burial policy faces: religious-cultural norms vis-à-vis burial practices; the scarcity of land; and demography.

Of these, the first is relatively fixed, though substantial variation in burial practices across time in both Jewish and Muslim religious traditions provide a rich source for legitimizing innovation. The second factor is also relatively fixed, though it can be modified with "higher-density" burial methods. We revisit these issues in Section 4.

It is the third factor — Israel's demography — that is the main cause of emerging problems in Israel's burial sector.

Two distinct demographic mechanisms are at work here: rapid population growth leading to an increase in the number of deaths as large cohorts of young people age; and shifting age composition, in particular, the rising share of the population that is elderly. Shifts in age composition affect the timing of high-mortality periods. We describe these mechanisms in more detail in Section 2 as we present the anticipated number of deaths between now and 2050. Before doing that, we review the SC's estimates of anticipated demand for burial. These appear to be the only existing numbers relating to anticipated demand for burial services in Israel in general. Others (e.g., Troen, 2025) reference these numbers.

Here is the more recent version of the SC's estimate (State Comptroller, 2024, p. 5):

> As of the end of 2021, some 9.3 million people live in Israel. Around 8.5 million of them are expected, according to a life expectancy of 83 years, to die by the end of the 21st century. On that basis, one can estimate that more than 8.5 million additional graves will be needed.

The methodological assumption underlying this is detailed in an accompanying footnote: the SC assumes that everyone aged at least 4 in 2021 will be dead by 2100 and that all of these people will be buried. Using the same logic, the SC then estimates the number of graves needed by 2065.

> As of 2021, there were about 3.5 million people aged at least 40 in Israel. According to the average life expectancy, out of the 8.5 million graves needed by the end of the century, about 3.5 million will be needed by 2065.

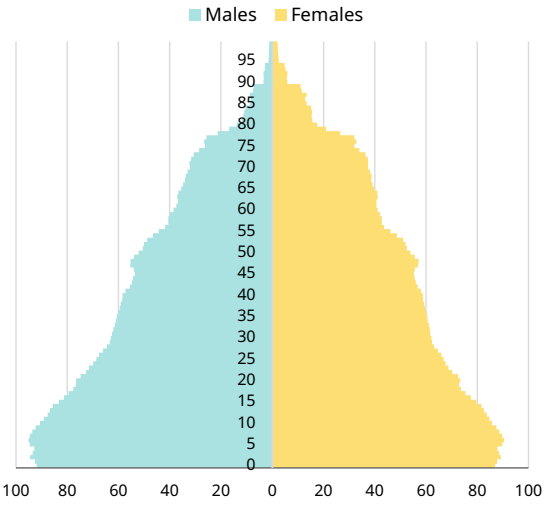
These are reasonable lay estimates, but from a demographic perspective, they have two major weaknesses.

First, they ignore the joint effects of (a) age structure and (b) the distribution of deaths across different ages. Take, for example, people yet to be born during the 2020s and 2030s. The SC's estimate implicitly assumes that none of these will die. Of course, it is true that most of them will survive beyond 2100, assuming there is no dramatic increase in mortality rates at younger ages. However, some proportion of them will die before 2100, and because of Israel's age structure, the actual *number* of deaths associated with that proportion will be much larger than the number of deaths among same age people today. This is because they will be a part of a much larger cohort, as can be seen in Figure 1, which shows the age structure of Israel's population in 2024.

The effects of age structure on the number of births can be illustrated in a very simple way. There were around 179,000 births in Israel in 2024, reflecting a period total fertility rate (TFR) of around 2.9 children per woman and the fact that around 311,000 women were at peak ages of childbirth (28–32). By 2036, the number of women at those peak ages of childbirth will increase by around 23%: this is the number of women aged 16–20 in 2024 (around 379,000) plus a few thousand net in-migrants between 2024 and 2036, minus a very small number that die. Even if the TFR falls to 2.5 children per woman, that higher number of women will give birth to around 195,000 children in 2036. In fact, only if the TFR falls below 2.3 by the mid-2030s will the absolute number of births fall below today's levels.

Replicating these calculations for each year between 2024 and 2033 gives us around 1.83 million births across a 10-year birth cohort. That high number demonstrates the power of age structure: in terms of the absolute number of births, the growing number of women entering reproductive ages over the next 20 years will compensate for anticipated reductions in fertility rates.

Figure 1. Israel's population by age and sex, mid-2024



Source: Alex Weinreb, Taub Center | Data: CBS

Applying mortality rates of 2015–2019 life tables to that 2024–2033 birth cohort implies that among boys born in 2024, 28% will die before 2100, and among those born in 2033, 13% will die. The equivalent percentages for women are 17% and 8%, respectively. Even if we allow for mortality rates to fall by 25% over the next several decades — rising incidence of obesity and diabetes over the last 20 years has slowed reductions in mortality, but the increasing use of Glucagon-like peptide-1 (GLP-1) receptor agonists (e.g., Wegovy) may reverse that trend — this means that roughly 216,000 members of the 2024–2033 birth cohort will die before the end of the century. To this figure we need to add people born in all subsequent decades of the century who die at even younger ages: ever lower rates of mortality applied to ever larger cohorts.

In summary, the SC's approach uses a convenient shortcut that would be valid in what demographers call a "stationary population," that is, a population with a zero-growth rate and a constant number of births and deaths, since that yields successive birth cohorts of identical size. But in Israel's growing population, the assumption of zero deaths among those born after 2022 yields a substantial underestimate of growth in the total number of deaths.

The second problem with the SC approach is that it assumes zero net migration. Migration has historically been the most challenging component of projecting population change (the other two components, fertility and mortality, are more stable). Contemporary instability in the Middle East alongside rising antisemitism in many western countries does not make this task any easier. However, based on historical patterns, Israel gains more people from migration than it loses. Combining data on *olim* with the Israel Central Bureau of Statistics' updated method for identifying long-term migration, we see that between 2010–2019 Israel's gained an average of 7,700 people per year in terms of net migration, that is, in-migrants minus out-migrants. Overall, that is a net direct gain of 77,000 people in 10 years, in addition to the indirect effect of children born to those immigrants after their arrival in Israel. Additionally, many of these immigrants are adults, and some post-retirement — there is typically a small secondary wave of migration in people's 60s and 70s — meaning that they are closer to peak mortality ages. Here, too, by ignoring migration, the SC's figures are likely to underestimate the likely number of deaths.

2. Israel's burial policy is unique

Israel is not unusual in experiencing demographic pressure on burial grounds. In fact, it shares this experience with many other high- and middle-income countries in which cemetery space has been rapidly exhausted by the same combination of population growth, aging and the increasing scarcity and cost of land. In many other countries, rapid urbanization has added to that pressure, since it shifts the balance of deaths from rural areas into cities, crowding urban cemeteries in particular (*The Economist*, 2012, 2017, and 2018; on Johannesburg, Lahore and Havana, respectively). As a result, both popular and scholarly literature has been covering shortages of burial sites across developed countries for many years (Libov, 1988; Strangwayes-Booth, 2013), the numerous calls for reform (see *New York Times* "Room for debate" in 2013 between seven people active in this area in the US and UK), and documented related stories like the repurposing of cemetery space into roads and residential areas (Kirk, 2012).

Nor is population pressure on urban graveyards a distinctly modern phenomenon. In the 19th century, high population growth and rapid urbanization led to the infamous overflowing of churchyards and crypts in major European cities.

The disturbing accounts of that period — noisome smells and decomposing body parts exposed to every passerby — propelled the transition to more rationally planned cemeteries, typically large and outside city limits, in which carefully numbered plots were organized in tidy rows (Laqueur, 2018).[4] Those accounts also stimulated interest in cremation.

Cemetery overcrowding is also not new to Jewish religious authorities. The famous Prague Jewish cemetery, in use from 1439 to 1787, constantly struggled with space, since secular authorities did not permit its expansion. The rabbinical solution was to add mounds of earth over existing plots (while also shifting the burial slabs up to the top). This is why the Prague cemetery not only looks chaotic in terms of the placement of headstones: it is also up to five meters higher than the surrounding area and needs a retaining wall. A similar solution was adopted in the main Warsaw Jewish cemetery after WW1. Many of those buried between WW1 and the 1930s were placed in mounds layered over existing graves.

Even if Israel is not unusual in experiencing demographic pressure on burial grounds, it is unusual in that some of the major strategies that lawmakers in other high-income countries have adopted to minimize the space consumed by the dead, have not been adopted by Israel. In fact, Israel's burial policy is distinct in three ways.

4 That was the case during average periods of mortality. During epidemics, accounts are much more horrific, with piles of corpses being left on church walls, mass burial directly in "plague pits", most of which now lie under buildings and roads in contemporary European cities.

Distinction 1: Almost everyone who dies in Israel — Jewish, Muslim and Christian — is buried

Despite a slight shift in attitudes to cremation in Israel's secular population — Finkelstein et al. (2022) report that 10% of Israel's Jewish secular population and 0% of its traditional and religious populations would favor cremation — burial as default practice is unlikely to change significantly, at least in the coming decades. That means that the projected number of deaths presented above is broadly equivalent to the number of expected burials over the coming decades, especially if one accounts for what we refer to as "burial migrants."[5]

The absolute dominance of burial over cremation lies in sharp contrast to practices in almost all other high-income societies, especially countries in northern Europe, North America, and predominantly Buddhist countries. In all of these, cremation rates are high or climbing fast. They are almost 100% in Japan,[6] exceed 80% in South Korea, Taiwan, Sweden, and Denmark, and are more than 60% — and steadily rising — in the US, Canada, UK, and many other western European countries.[7]

Cremations reduce the amount of land required by the dead. Even when urns containing the deceased's ashes are buried or placed in columbaria or family vaults — as opposed to being stored in people's homes or disposed of in other ways (ashes poured into the sea, dug into the earth around a favorite tree, turned into special "cremation jewelry," formally processed into "human fertilizer," compressed into a concrete-like structure to strengthen coral reefs, etc.) — they take up a lot less space than any of the standard types of burial that are practiced in Israel, as described below.

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5 Finkelstein et al. (2022) report around 2,000 bodies were flown into Israel for burial per year in the 2010–2021 period, of which roughly 1,000 per year were not Israeli citizens. A conservative assumption is that these burial migrants compensate for the relatively few Israelis who choose to be cremated.

6 Cremation has long been the favored method in Japan. Known as Kotsuage, it differs from western methods in profound ways, especially in the involvement of family members in picking through the bones that survive the fire.

7 South Korea is an interesting case since there was a very rapid embrace of cremation. Shaffer (2020) reports that it "was 13.7% in 1980, 17.8% in 1991, 33.7% in 2000, 52.6% in 2005, 61.9% in 2008, and 82.7% in 2016." This increase, encouraged by the government and a range of social organizations, was driven by "a shortage of burial grounds."

The absolute dominance of burial over cremation in Israel pertains to both Jews and Muslims, religious and secular. It means that a rising number of deaths in Israel places more pressure on land than in other high-income countries. Indeed, minimizing land use is one of the reasons that *Alei Shalechet* (literally Fall Leaves), one of the few Israeli companies to offer cremation, gives to justify the practice in the Israeli setting.

Distinction 2: Funeral expenses are borne by the state

Israel's welfare state actually extends into the grave. That is unusually generous. The norm in European countries is that the state only covers the cost of the simplest possible funeral — typically involving cremation — where families are too poor to cover the costs, and where the deceased had no assets and no "funeral insurance," widely sold in some countries. Where the deceased did have assets, either surviving family and friends pay for the funeral, or the costs can be covered by a loan secured by those assets.

Costs of burial vary considerably across countries, ranging from around Euros 2,000 (around NIS 8,000) in Eastern European countries to around Euros 13,000 (around NIS 52,000) in Germany. In London, a fresh burial plot costs in the GBP 10,000– GBP 23,000 range (NIS 44,400–NIS 102,000), though a recycled site — more on that below — is much cheaper (The Economist, 2022). In other densely populated, high-income countries, spots in columbaria can be even more expensive. Hong Kong is an extreme case in this regard but it is illustrative: public columbaria include spots for 55% of urns and are full, leading to a five-year waiting list (Biegelsen, 2012) and to a lottery system for allocating niches that is increasingly falling behind the demand (Zhao, 2017). In the meantime, as funeral homes "store the ashes of hundreds of thousands of deceased in backrooms" (Gorvett, 2017), authorized private columbaria are supposed to charge around HK$ 500,000 for a niche (NIS 233,000), though Zhao (2017) reports three niches being offered at up to HK$ 3.5 million each (NIS 1.6 million).[8]

8 Not surprisingly, these financial pressures have stimulated a range of other proposed solutions to avoid the dead monopolizing more of Hong Kong's scarce land. Among them: a floating cemetery (called Floating Eternity) that could contain up to 370,000 funereal urns (Metcalfe, 2012).

These accounts are important because they point to problems that Israeli households do not confront unless they want to be buried in a particular plot, or in a cemetery that is not in their town of residence. By covering the cost of the funeral, including the cost of the land, the state effectively shields Israelis from all burial-related expenses, including those associated with increasingly scarce land resources. In international perspective, especially in high-income countries, that is an increasingly unusual public policy.

Distinction 3: Burial plots in Israel are inviolable

Irrespective of religion, Israelis expect burial sites to remain untouched forever. This, too, deviates from longstanding approaches in almost every other high-income country. In European societies, graves in churchyards were routinely moved, and remains routinely exhumed, from at least the Middle Ages. This was the only way to make room for new bodies. Where remains were exhumed, they were reinterred in a charnel house or reliquary (Laqueur, 2018). Churchyards were not, in short, a place of everlasting rest.[9]

This type of grave recycling, as it is now sometimes called — intentionally tapping into the positive moral association of recycling — remains the standard practice across Europe. The state may provide access to a plot at no cost (e.g., Norway) for a period of time, but it is a leasehold, not a freehold. The length of the lease, referred to as the *Ruhefrist* in Germany or *période de repos* in France, varies considerably across countries, but it rarely extends beyond a single generation. Writing in 2018 in the context of the emerging lack of burial space in aging Europe, a Portuguese observer describes how:

> In Greece, burial plots are [...] rented for a 3-year period, with yearly extensions available at increasingly prohibitive price points; other countries have extended their leases to last at least a decade, with the Netherlands leasing plots for 10 to 20 years, Switzerland and Sweden for 25, Italy for 10 to 30, and Germany for 15 to 30. France, like Portugal,

9 An article in The Economist (2022) described this in colorful, if macabre, terms: "It is better to think of churchyards less as elegiac dormitories for the dead (if they had been, they would have had to be much bigger) than as a sort of subterranean bone broth that was occasionally stirred, and then garnished with gravestones."

> still allows for the purchase of perpetual plots, but there are also temporary leases lasting for 10, 30, and 50 years. (Ferraz, 2018)[10]

It is, of course, possible to purchase perpetual rights to a grave, but that is beyond the abilities or willingness of most families. Costs of up to Euros 150,000 were reported in Greece in 2011 (Mar, 2011). That is around Euros 198,000 in 2024.[11]

Leasehold rights are somewhat longer in Confucian East Asia — around 60 years in densely populated South Korea, where cremation is also quite new — and in Anglophone countries. They are 75 years in parts of the UK, though other approaches like deepening graves to allow for multiple occupants ("lift and deepen"), are now practiced (The Economist, 2022).

In the US, there is much greater variation. Potter's fields like Hart Island, where more than one million poor New Yorkers have been buried, long practiced grave recycling (Hunt, 2013; Kilgannon, 2023) while private cemeteries in the New York and Connecticut areas have been struggling with space since the 1980s (Libov, 1988). Elsewhere, where land is typically cheaper, there are still more perpetual concessions, at least on paper. The problem is, there is also increasing recognition that the "pay once, up front, then stick around forever" approach means that many cemeteries will not survive financially (Biegelsen, 2012). This is the case even in US states that mandate cemeteries to set aside a portion of their income in a perpetual care fund that, if invested wisely, is supposed to pay for continued upkeep once the cemetery is full and no

10 There are also considerable differences across countries in the way that the remains of bodies are exhumed at the end of the period. Mar's (2011) description of Greek burial practice makes it clear that when the period is short, bodies are much less likely to have fully decomposed. This is also the case where bodies have been embalmed and placed in more effectively sealed containers, or in a hardwood coffin. Indeed, reports from Germany, Austria, and Switzerland suggest that even after 40 years an increasing share of bodies have not fully decomposed (Leidig, 2003). The same happened in Norway after a 30-year practice of wrapping the dead in plastic within their coffins (intended to stop leakage into groundwater) (Jervell, 2013). Each of these practices exacerbated the grave shortage problem because it slowed down the pace of grave recycling.

Note that in Cuba, where funerals are also free but in a shared vault containing up to 24 coffins, the initial burial time is even shorter: relatives are asked to collect the remains after two years (The Economist, 2018).

11 Greece is an interesting comparison to Israel since, like in Israel, and unlike most other European countries, cremation rates are very low, in large part because of vociferous opposition to the practice from the influential Greek Orthodox church.

longer generating income from burials (Arcuri & Nadaff-Hafrey, 2018). Absent outside intervention, if these older private cemeteries run out of money, they can become prey to developers (The Economist, 2020), even as their public counterparts have been protected, usually by transitioning into public parks. Many of lower Manhattan's prized parks, including Washington Square, Madison Square and Bryant Park, began life as public cemeteries: Hunt (2013) asserts that "public burials [...] saved open space from development."

In summary, the Israeli practice of granting a permanent and inviolable resting place to every Israeli citizen is very unusual, if not unique, in international perspective. In almost every other high-income country, at the end of the rental period, the remains of the person buried in the plot are gathered and "reduced." In some countries they are placed in a reliquary in the family vault; in others they are placed in a chattel house or mass grave. In all these cases, any slab that has been placed on the site with the deceased's name is cleared and the space is freed up for the next person. The same is true of spaces in columbaria used to store the urns that contain the ashes of the dead: when usage fees are no longer paid, those spaces are cleared and made ready for the next urn.

3. Projected number of deaths

We now turn to the number of burial spaces that Israel will need to prepare for over the next decades.

A. National trends up to 2050

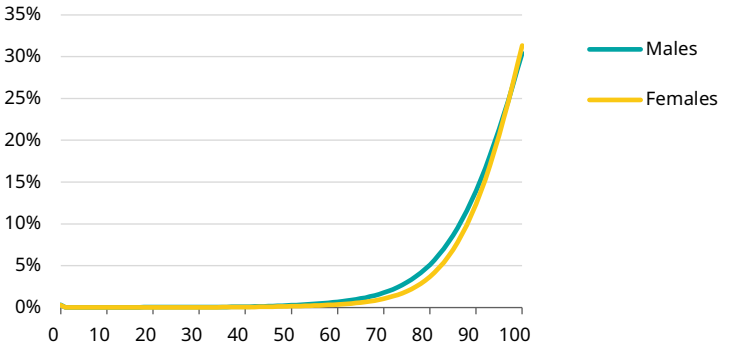
Israel's population has been growing at an average of 1.9%–2.0% per year for the last several decades, with annual growth rates rising above this during periods of high in-migration, most notably in the early 1990s. As is well known, no other high-income country has enjoyed sustained growth rates at this level, or even close to this level, since the 1950s.

Not surprisingly, Israel's rapid population growth has also meant a rise in the annual number of deaths. In 1953, there were 9,900 deaths in Israel. Over the next decades, even as improvements in public health drove down mortality rates at all ages, there were relatively stable increases in the annual number of deaths: from 13,800 in 1963 to 23,000 in 1973, 27,200 in 1983, 32,900 in 1993,

38,400 in 2003, 41,100 in 2013, and 49,600 in 2023. Overall, since the 1970s, the annual number of deaths has been climbing at between 1.5%–2.0% per year, even as life expectancy at birth — a measure estimated from age-specific mortality rates — has increased by more than 10 years.

This is where the second demographic factor comes into play: shifting age composition, in particular, the rising share of the population that is elderly. For most of the next two decades, the annual number of deaths in Israel will climb at a much higher rate, exceeding 3% per year. This acceleration in the number of deaths will be driven by Israel's age structure. As can be seen in Figure 1, Israel's population has a distinctive bulge of people in their 60s and early 70s relative to their 80s. Since, as shown in Figure 2, the age-specific probability of death rises sharply by age, especially in people's 70s and 80s, this growth in the number of elderly in Israel will inevitably lead to an increase in the number of deaths, since an increasing number of Israelis will be subject to the higher age-specific probability of death. That increase will happen even if ongoing improvements in public health continue to reduce the probability of death at any given age. That is, the shape of any future age-specific mortality curve (Figure 2) will remain the same even if improvements incrementally lower it.

Figure 2. The annual probability of dying, by age and sex, 2015–2019

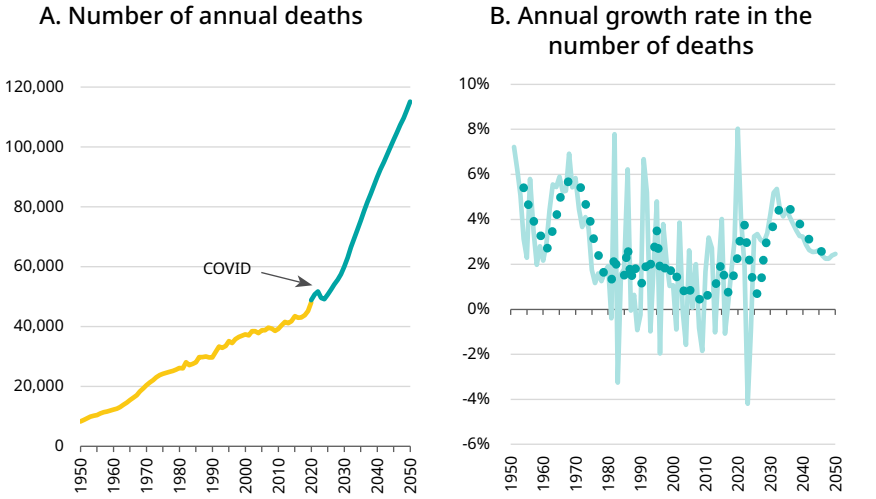


Note: At the highest age of this distribution (not shown), the probability is set to 1.0.

Source: Alex Weinreb, Taub Center | Data: CBS

Figure 3 shows the effects of this on number of deaths in the simplest terms. The yellow line in panel A graphs the observed annual number of deaths since 1950. The turquoise line is the projected annual number of deaths from 2024 to 2050, based on applying projected age-specific mortality rates[12] to Israel's Central Bureau of Statistics' medium scenario population projection.[13] Panel B graphs the annual percentage increase in the number of deaths: the thicker dotted line is a smoothed cumulative three-year average.

Figure 3. Annual number of deaths, including projections to 2050, and growth rate in that annual number



Source: Alex Weinreb, Taub Center | Data: Up to 2024, CBS; 2025–2050, estimates based on CBS long-term population projections

12 The projected age-specific mortality rates are described in Weinreb (2020). Briefly, they assume continued reduction in age-specific rates along the lines of reductions observed in the 2000–2019 period.

13 Historically, the CBS projections have largely underestimated in-migration/*aliya*, which also includes people moving to Israel as retirees, so this is arguably a lower bound of the anticipated number of deaths over the next 25 years.

The results of this exercise are clear. Between 2005 and 2019, the annual number of deaths increased by around 1.08% per year. Between 2025 and 2040, the annual number of deaths will increase by an average of 3.85% per year. From then until 2050, it will increase at around 2.5% per year. These increases will occur despite our assumption that reductions in age-specific mortality over the next few decades will continue at roughly the same pace as has been observed over the 20 years preceding the Covid pandemic.

In fact, this is a conservative assumption. Gains to life expectancy have been slowing across most high-income countries in the last decade, largely driven by flat or even rising mortality in subpopulations with low educational levels (Sasson, 2025). If the same happens in Israel, the actual number of deaths is more likely to exceed our estimates than fall short of them.

To provide more perspective on the anticipated increase in the number of deaths, Table 1 portrays the same numbers in terms of cumulative number of deaths within each decade from January 1, 1950 to December 31, 2049. In the first decade of the current century, about 384,000 people died in Israel, almost four times as many as in the 1950s. By the end of the current decade there will be around 520,000 deaths. More than 700,000 will die across the 2030s and around one million across the 2040s.

Table 1. Number of deaths by decade, 1950–2049

Decade	Number of deaths
1950–1959	102,830
1960–1969	152,646
1970–1979	235,243
1980–1989	282,421
1990–1999	340,037
2000–2009	384,079
2010–2019	430,543
2020–2029	520,395
2030–2039	738,137
2040–2049	1,011,536

Source: Alex Weinreb, Taub Center | Data: Up to 2024, CBS; 2025–2050, estimates based on CBS long-term population projections

Here is yet another way to consider these trends. Between 2024 and 2050, slightly more people will die in Israel — and need to be buried — than died in the entire 1950–2023 period: about 2.18 million people relative to 2.12 million.

B. National trends, 2050–2100

The annual number of deaths will increase even faster in the second half of the 21st century. To get an impression of how much, we extend these estimates by applying the same annual growth rates in the number of deaths that Israel experienced in the 1974–2024 period to the 2050–2100 period. This draws on the idea that, given Israel's very low mortality levels below age 30, the vast majority of people who will die in the 2050–2090 period are already alive. This also means that the reductions in fertility of the last few years, and the anticipated reductions in the future, will hardly affect these estimates until the end of the century, at the earliest. In other words, we expect Israel's future age structure to largely replicate the current age structure in terms of relative cohort size, even as mortality rates continue to inch downwards.

Based on these calculations, and despite periods of slow growth in the number of deaths — mainly during periods where flatter parts of the age structure reach their 70s and 80s — *we anticipate an additional 9.1 million deaths from 2050 to 2100*. That is on top of the 2.18 million anticipated deaths between 2024 and 2049. The sum of these two periods is 11.3 million deaths. That is 2.8 million more deaths — a 33% excess — than the 8.5 million additional graves in the SC's estimates: a very large margin of difference.

We reiterate that these estimates are relatively conservative. They are based on the assumption that mortality rates will continue to fall over the remaining decades of this century. If the rate of reduction in mortality rates slows – as is implied by flattening life expectancy gains across most high-income countries in the last several years — the number of deaths will exceed our estimates.

A final way of looking at this is to approximate the number of years it takes Israel — or will take it — to experience an additional million deaths. Table 2 presents these estimates for the 1950–2100 period.

Table 2. The number of years to reach the next million deaths, 1950–2100

Beginning year	Cumulative millions by beginning year	Numbers of years to next million	Final year
1950	Less than 1 million	46	1996
1996	1 million	25	2021
2021	2 million	13	2034
2034	3 million	11	2045
2045	4 million	9	2054
2054	5 million	7	2061
2061	6 million	6	2067
2067	7 million	6	2073
2073	8 million	5	2078
2078	9 million	5	2083
2083	10 million	5	2088
2088	11 million	5	2093
2093	12 million	4	2097
2097	13 million		

Source: Alex Weinreb, Taub Center | Data: Up to 2024, CBS; 2025–2100, estimates based on an extension of the CBS long-term population projections

We are still in the relatively early stages of the third million. With every passing year, the additional number of deaths is getting larger. By the mid-2080s, when today's infants will be in their mid-60s, around 200,000 Israelis will be dying every year. By the mid-2090s, around 220,000 Israelis will be dying every year.[14] And unless Israel's population growth rate — especially the growth rate of the elderly population — falls before 2100, the number of deaths will continue to climb into the early part of the 22nd century.

14 More formal estimates of the number of deaths would need to project the population as a whole, which entails making assumptions about fertility, mortality and migration that are well beyond the scope of this paper. Nonetheless, these informal estimates have face validity. The IHME team projects that Israel's population will reach around 25 million people by 2100. If that occurs, the 250,000 deaths per year that we assume here will translate into a crude death rate of 1 per 1,000, which is 10%–20% lower than the rate in contemporary Japan, Germany, Italy, and Greece, all of which have large aged populations and high life expectancy.

C. District-level trends by subpopulation

We replicate the projections to 2050 for each of Israel's seven districts, and separately for Jews/Others and Arabs (since every religious tradition maintains its own cemeteries, and relative concentrations of Jews and Arabs vary considerably by district). Note two assumptions underlying these estimates. First, we use separate estimates of mortality by age for Jews (including Others) and Arabs but assume the national mortality rate for Jews/Others and Arabs applies in the same way across regions. This will likely lead to a modest overestimate of mortality in wealthier Tel Aviv, and an underestimate in southern and northern regions, since differences in access to healthcare services marginally affect mortality. This is over and above any differences between Jews and Arabs, which are already taken into account.

Second, the estimates assume zero net migration between the districts. This is reasonable in the Arab population. However, it ignores the small wave of retirement-related migration among Jews — people moving from one region to another after retirement. Overall, we expect this second assumption to largely offset the bias arising from the first. For example, data from the 2018 Israel Social Survey, which included information on prior location of residence, show that there is net movement of people from age 75 into the Tel Aviv-Gush Dan area (own calculations, 2018 ISS). That should increase the number of deaths in that region, which will compensate for the SES-effect on mortality in Tel Aviv mentioned above.

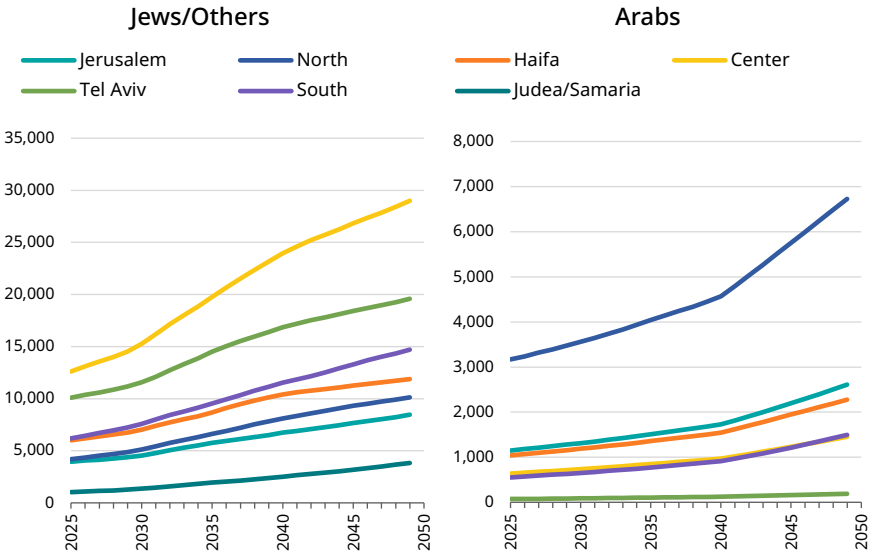
In general, then, we think of these district-level estimates as being somewhat less accurate than the national ones, at least for Israel's Jewish/Other population. Among Israel's Arab population, which has low inter-regional migration rates, especially at the older ages where mortality is concentrated, these estimates should be more valid.

Figure 4 presents the basic trends for each of these populations in terms of the expected annual number of deaths. In the Jewish sector, deaths will continue to be concentrated in the Gush Dan area, captured here by Central and Tel Aviv region, with the annual number rising from around 22,000 in 2024 to 49,000 in 2049. This is both the most populated region in the country and it has the largest elderly population. That being said, other than in Judea-Samaria, whose small Jewish elderly population has meant relatively few deaths, the proportionate increase in the number of Jewish deaths will be highest in Northern and

Southern regions: we anticipate 2.5 times as many deaths annually in these districts in the late 2040s than in the mid-2020s (from around 6,000 to 15,000 in the South, and 4,000 to 10,000 in the North). Those increases will be driven by the rapid rise in the number of elderly.

The very different geographic distribution of Israel's Arab population means that the expected deaths will also differ from that of Jews. Across the following 25 years, around 47% of all Arab deaths will be in the Northern region. Here, too, numbers will increase sharply — by a factor close to 2.5 in all regions — due to a rapid rise in the number of elderly.

Figure 4. Projected annual number of deaths by district and subpopulation



Source: Alex Weinreb, Taub Center

Assuming that Israel maintains its strong preference for burial of some sort — as opposed to cremation — it is helpful for planning purposes to convert these anticipated annual numbers of deaths into cumulative numbers within each region. The Jewish totals (including Others) are shown in Table 3, in 5-year intervals starting from 2024. We see that by the end of 2029, we project almost 25,000 deaths of Jews (and Others) in Jerusalem, almost 27,000 in the North, 38,000 in Haifa, 40,000 in the South and 143,000 in the combined Tel Aviv and Central district. By the end of the 2030s, these numbers will increase on average by a factor of 3.4 (ranging from 3.24 in Tel Aviv to 3.81 in Judea-Samaria): more than 1 million Jews/others will die in Israel between now and then, around 51% of them in the Tel Aviv and Gush Dan area. Over the 2040s, another 800,000 will die with, again, slightly more than 50% in the Tel Aviv and Gush Dan area.

These projections make clear how much existing plans underestimate the coming need. The 247,800 planned grave sites that include 10 four-storey burial towers at the Yarkon cemetery — the main cemetery for Jews in Gush Dan in the coming years — were supposed to suffice for burials over a 30-year period, that is, until around 2037. This estimate was based on the "pace of burial in the 2000–2007 period." (State Comptroller, 2009). Likewise, the plan for the Bareket mining area that was authorized by the government in 2006 — only in November 2024 did the government issue an actual tender for planning and running the building of the first part of Bareket cemetery (Tender Number 001/2024) — was supposed to include space for 314,000 burials (at 976 people per dunam) that would, it was claimed, suffice for Gush Dan and the Center for around 40 years (State Comptroller, 2009, p. 1034).

The projections here suggest that the 562,000 new burial spaces in the Yarkon and Barkan cemeteries — assuming the latter will be constructed over the next few years — will suffice for the burial of Jews (and Others) who died in Tel Aviv and Central Regions until 2035. Note that this does not even include forthcoming Arab deaths, which will account for only around 3% of all deaths in Tel Aviv and Central districts in the 2030s. In other words, the anticipated supply of burial spots in major metropolitan cemeteries in Tel Aviv and Central Regions falls short of the anticipated 1.002 million Jewish deaths in the 2010–2049 period by around 440,000. Even if some of those 440,000 can be interred in other much smaller and increasingly full cemeteries around Gush Dan, at least a couple of hundred thousand will be left without a site.

In summary, keeping pace with the projected number of Jewish deaths in the Gush Dan region will require increasingly rapid building of burial infrastructure, enough to accommodate around 23,000 deaths per year in the late 2020s, 26,000 deaths per year in the mid-2030s, and 33,000 per year in the mid-2040s. As noted earlier, the annual number of deaths will continue to increase into the second half of the century.

Table 3. Cumulative number of expected deaths of Jews and Others in 5-year intervals, by region

	2029	2034	2039	2044	2049
Jerusalem	24,608	49,798	80,468	115,876	156,139
North	26,674	55,345	91,432	134,369	182,983
Haifa	37,740	76,261	123,507	177,285	235,144
Center	80,009	165,488	272,957	398,712	538,184
Tel Aviv	62,917	126,503	203,967	291,463	386,385
South	39,521	81,470	133,214	194,193	264,252
Judea/Samaria	6,664	14,619	25,419	39,295	56,844
Total	**330,568**	**636,302**	**1,011,049**	**1,441,199**	**1,819,932**

Source: Alex Weinreb, Taub Center

Equivalent totals for deaths of Arabs are shown in Table 4. They show similar trends, with substantial increases in all areas. The North, in particular, will see a massive rise in absolute number of deaths: from almost 20,000 in the coming five years rising to around 116,000 over the next 25 years. But in terms of burials, perhaps the most challenging areas will be in Jerusalem and Haifa regions, where greater proportions of the Arab population live in large mixed cities, which places more limits on cemetery expansion.

Table 4. Cumulative number of expected deaths of Arabs in 5-year intervals, by region

	2029	2034	2039	2044	2049
Jerusalem	7,186	14,133	22,104	31,653	43,658
North	19,688	38,402	59,614	84,790	115,997
Haifa	6,503	12,768	19,918	28,430	38,990
Center	4,009	7,909	12,389	17,756	24,466
Tel Aviv	467	942	1,507	2,199	3,077
South	3,501	6,991	11,127	16,272	23,040
Total	**41,354**	**81,144**	**126,659**	**181,100**	**249,227**

Source: Alex Weinreb, Taub Center

4. Israel's approach to managing population growth in its cemeteries

We noted earlier that the public policy approach to burial in Israel has long been decentralized, with the government dictating rights of resident citizens to burial close to their place of residence, assigning the responsibility for managing those rights to local burial authorities, covering the basic costs, and then occasionally amending the original 1971 burial laws to shift things like payment levels and rights to alternative practices such as non-denominational burial and cremation. Here we briefly and selectively review some key elements of those shifts in policy on paper and in practice. First, however, we enumerate and describe the different types of burial currently available in Israel. We also show the implications for each in terms of cost and land use.

A. Types of burial

For most of Israel's existence, the standard type of burial has been a single-plot burial, known as "field burial". Standard field burial allows for 300 graves per dunam. High density field burials allow for 370 graves per dunam.

To increase the number of graves per dunam over these levels, there are three major categories of burial practice.

The first and simplest category includes what we call "dig deeper" methods. The most widely known practice in this category is a *double burial*. This refers to a burial plot in which a first deeper grave is filled first; the second upper grave is filled by a later death, with a barrier separating the two. This method effectively doubles the carrying capacity of a given piece of land to 600 graves per dunam for standard field burial, or up to 740 for intensive field burial. A much less widely used version is *triple burial*, which has three layers of graves in the same plot.

A related approach, known as *burial above*, also doubles carrying capacity. It involves deepening the grave of a person who was already buried, allowing for the addition of a second body in the same vertical space. This is a version of the layered approach used in the Prague and Warsaw Jewish cemeteries, as well as the *lift and deepen* approach used in older non-Jewish cemeteries in the UK, Germany, Austria and elsewhere.

A second category of alternative burial practices is known as "condensed burial." This refers to a couple of different practices. *Niche burial*, also known as *Sanhedrin burials*, refers to burial in a wall chamber, with multiple niches stacked vertically. The wall can be built (e.g., a large concrete bloc) or natural (e.g., the wall of a cliff-face or cave). Another condensed burial practice is *burial at a height*, which refers to burial in a multistorey cemetery. There are ten of these multistorey towers at the Yarkon cemetery in Gush Dan, each with a capacity of around 10,000 bodies. Multistorey burial facilities have also been added to the main Jerusalem cemetery on Har Ha'menuchot.[15]

These two types of condensed burials are often combined. For example, the multistorey areas of Har Ha'menuchot have holding walls on each level that allow for Sanhedrin burials, while the very thick floors allow for double burials on each building level. Together this makes possible 1,500 burial places per dunam. Large underground burial chambers and tunnels, like those underneath Har Ha'menuchot, are also a type of condensed burial. They fit 1,000 graves per dunam, though underground measures of land use are inherently different to land use on the surface: the former is created for the express purpose of burials.

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15 Multistorey burial buildings, sometimes referred to as "vertical cemeteries" (Hariyono, 2015), are increasingly common in urban areas globally. They have been used in Hong Kong since the 1980s (Metcalfe, 2012). Gorvett (2017) provides a detailed description of a modern one in Brazil. Campbell-Dollaghan (2013) also describes a 32-storey vertical cemetery in Sao Paolo that houses a mausoleum, ossario and, somewhat oddly to Israeli ears, a Museum of Old Cars.

The third category of alternative approaches to burial is both the newest and, ironically, also the most ancient. It is not yet practiced in Israel but there is growing pressure to reintroduce it as a standard method (Furstenberg, 2017). This is the "bone collection" method, which was the standard Jewish burial practice from the First and Second Temple period into the Mishnaic and Talmudic periods (c. 1000 BCE – 500 CE).[16] This is a two-stage method in which the deceased was buried immediately after death. After a year, his/her bones were collected and placed elsewhere: in a family collection area during the 1st temple period and family tomb or ossuary thereafter. Over the last few years, there have been attempts to revive this practice in Israel under the name of "Land of Israel burial." Its proponents consider it to be a more traditional, familial, ecological and economically sensible solution to Israel's burial problem.[17] The plan is to initially give the deceased a standard field burial. After about a year, on a *bone collection day* — a practice extensively discussed in Talmudic sources — the *Hevra Kadisha* (local burial society) will collect the bones and move them into an ossuary stored in a nearby family compound. In terms of an eternal resting place, the method is supposed to allow for 3,000 people per dunam.

B. Cost and land use

Each of the burial methods described above differs in terms of the amount of land that must be set aside for each grave, and the cost of preparing and maintaining each grave. For field burials, those costs are relatively minimal, involving little more than terracing, digging and maintenance. Condensed burial methods, in contrast, require more substantial infrastructure investment. For example, the burial chambers underneath Har Ha'menuchot cost NIS 300 million to build (for around 40,000 burial spots, or NIS 7,500 per spot). The 10 four-storey burial towers at the Yarkon cemetery will include around 100,000 burial spots at an average cost of NIS 10,000 per grave. Each of these must also include additional infrastructure like electricity, elevators, and drainage.

16 Though not currently practiced, laws associated with *bone collection* are referenced. Notably, they were cited when Gush Katif settlements were uprooted and graves in the settlements' cemeteries emptied and moved.

17 See Land of Israel Burial Association website.

Table 5, adapted from State Comptroller (2024), and based on the 2022 Israel Planning Administration (IPA), includes estimates of both the per grave cost in shekels and the amount of land required. These cost estimates are informative, but they have two important limitations. First, the cost includes development and maintenance of the grave only. It does not include the current value of the land itself, let alone its future value as land scarcity increases. We briefly address this issue later on. Second, the estimates do not — and cannot — fully include costs associated with the long-term deterioration of at least some of the new burial infrastructure. Notably, multistorey concrete buildings are rarely expected to last more than a century. They last less than that if any one of the following three conditions are met: low-quality concrete was used; it was mixed in humid conditions; the building is exposed to the elements and has poor drainage.[18] Even with the most effective maintenance, this means that concrete buildings must eventually be replaced. That presumably includes the *burial at height* structures currently being employed, yet that replacement cost is not built into the IPA estimates.

Table 5. Grave density and per grave costs, by method

Category	Burial method	Graves per dunam	Cost per individual/ family grave (NIS 2022)
Baseline	High density field burial	370	3,800
Dig deeper	High density double burial	740	2,800
Dig deeper	Triple level burial	1,100	2,300
Condensed	Burial at height (e.g., Yarkon)	1,500	18,000
Condensed	Wall niches	1,380	5,300
Condensed	Cave/tunnel burial (e.g., Har Menuchot)	(1,000)	20,300
Land of Israel	Ossuary building	2,400	~5,300–20,300
Land of Israel	Ossuary building in a cemetery wall	3,100	~5,300–20,300

Note: Costs include development and maintenance only. They do not include the lost value of land.

Source: Alex Weinreb, Taub Center | Data: State Comptroller, 2024 (according to data from the Master Plan of the Israeli Planning Administration for cemeteries, Stage B, July 2022)

18 In Israel, Teken 118 is supposed to ensure that all concrete used in buildings lasts at least 50 years, irrespective of conditions. The American Certified Commercial Property Inspectors Association (CCPIA) — the professional association of building inspectors in the US — has different estimates of the "life expectancy" of concrete, depending on where in a building it is used. It is valued at 80–90 years in foundation, 50–75 year range in retaining walls, 60–75 years on surfaces, and 50–60 years on stairways. See CCPIA website.

Table 5 shows that in terms of the number of dunams consumed by cemeteries, high density field burial, the standard method used in Israel for most of the State of Israel's existence, is the least efficient and Land of Israel burials the most. One important reservation here is that cave/tunnel burials arguably use zero land since they are spaces created within previously unused hills. In an important sense, they are creating new land.

In terms of the narrowly defined cost of burial captured by the IPA, the situation is more complicated. Field burial is the cheaper method. Only *Dig deeper* approaches have a lower per grave cost. In contrast, per grave costs of the *burial at height* and *tunnel* methods are roughly five times as high.

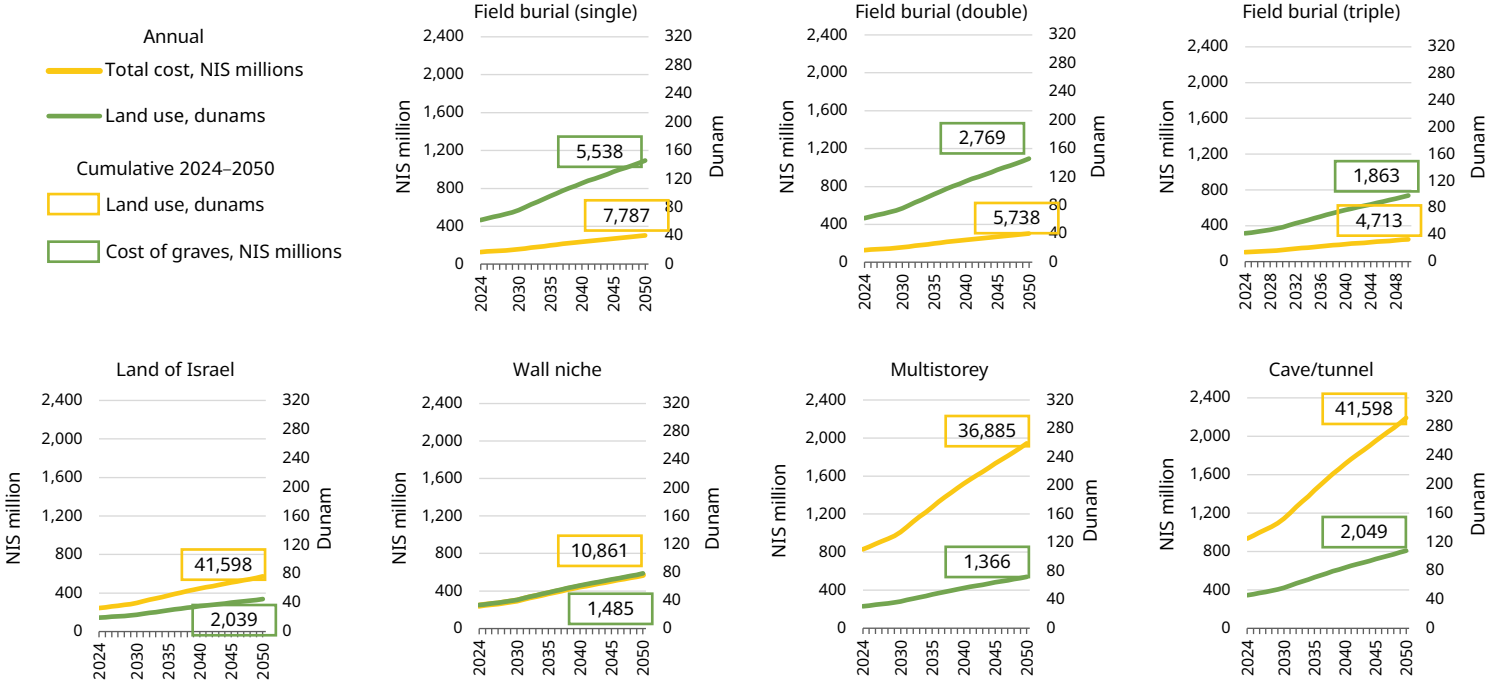
While the Land of Israel burial uses the least amount of land by far, it is not easily assigned monetary values. Collecting bones from a temporary grave and placing them in a family ossuary for eternal rest clearly reduces the number of new graves that must be prepared since the original grave used for the first year can be reused. That said, the family ossuaries into which those collected bones are placed must also be prepared. For that reason, we assign those costs a range that extends from costs associated with a wall niche to those associated with an ossuary in a dedicated tunnel.

These cost rankings remain similar even when we add a correction for the inherent land value. Put aside the problem of how we price land that is being taken out of public or private use forever. Even if we priced an undeveloped dunam of such land at NIS 1 million, which is roughly 10 times the cost of an undeveloped dunam in the Negev today, that would only add around NIS 2,700 to the per grave cost of field burials. That would raise the cost of a field burial to around NIS 6,500. Although that reduces the gap between the cost of a field burial and the burial at height or cave/tunnel options, the latter remain roughly three times as expensive.

To demonstrate the implications of these burial methods for cost (narrowly defined) and land use, Figure 5 graphs the combination of 2022 costs with anticipated number of burials in Israel over the next 26 years under the hypothetical and unrealistic assumption that 100% of anticipated deaths will be conducted using that single method (a more realistic simulation of costs follows). The lines in each graph point to the annual cost or land use associated with the method. The numeric box in each graph is the cumulative cost in terms of shekels or dunams across the 2024–2050 period.

Figure 5. Annual cost of graves and annual total land use (dunam), if 100% of burials were conducted with the given method, and cumulative cost and land use, by type of burial, 2024–2050

Dunams, NIS million, 2022 prices



Source: Alex Weinreb, Taub Center

This exercise highlights the basic problem facing contemporary policy makers. Field burials, whether single, double or triple, are cheaper in terms of current costs even if, other than little-used triple burial, they consume more land. In contrast, the most land-efficient methods demand more investment in the short-term. For example, if every person who dies in Israel between 2024 and 2050 is buried in a multistorey cemetery, it will cost the country NIS 36.9 billion (2022 prices). That is 4.7 times greater than high density field burials (which is actually an underestimate since, as noted earlier, the stated cost of multistorey cemeteries does not include very long-term needs to replace concrete infrastructure).

This being said, there is massive variation in cost across high-density burial methods. Figure 5 shows that wall niches and Land of Israel burials provide the optimal combination in terms of a relatively low cost per grave and low land consumption. They are also much less demanding in terms of maintenance: it is much simpler to patch up or replace a stand-alone one-storey concrete structure that contains numerous wall niches than a pillared multistorey structure engineered to bear enormous weight.

C. The price of action and inaction

Figure 5 makes the unrealistic assumption that 100% of anticipated deaths will be buried using a single method. A more realistic portrayal of impending financial and land costs associated with burial means mixing these methods. This also allows us to put a price on different types of legislative action and inaction.

Here, we simulate the cost in 2022 shekels (in accordance with the values in Table 5) and land use (in dunams) under three scenarios. Each multiplies the projected number of deaths in any given year between 2025 and 2050 with the share of burials using each burial method. Scenario 1 assumes that the share of burials using each method will remain constant at its approximate 2025 level. Scenarios 2 and 3 assume a steady transition towards higher-density burial practices. The specific distributions are shown in Appendix Figure 1. The core distinction between Scenarios 2 and 3 is that the former focuses on burial methods currently being favored: double burial, niche burial multistorey burial and cave/tunnel burial. It does not include Land of Israel methods since these are not currently used. In contrast, Scenario 3 assumes a steady transition

toward less costly types of higher-density burial. Specifically, most of the multistorey and cave/tunnel burials are switched to the Land of Israel burial option.

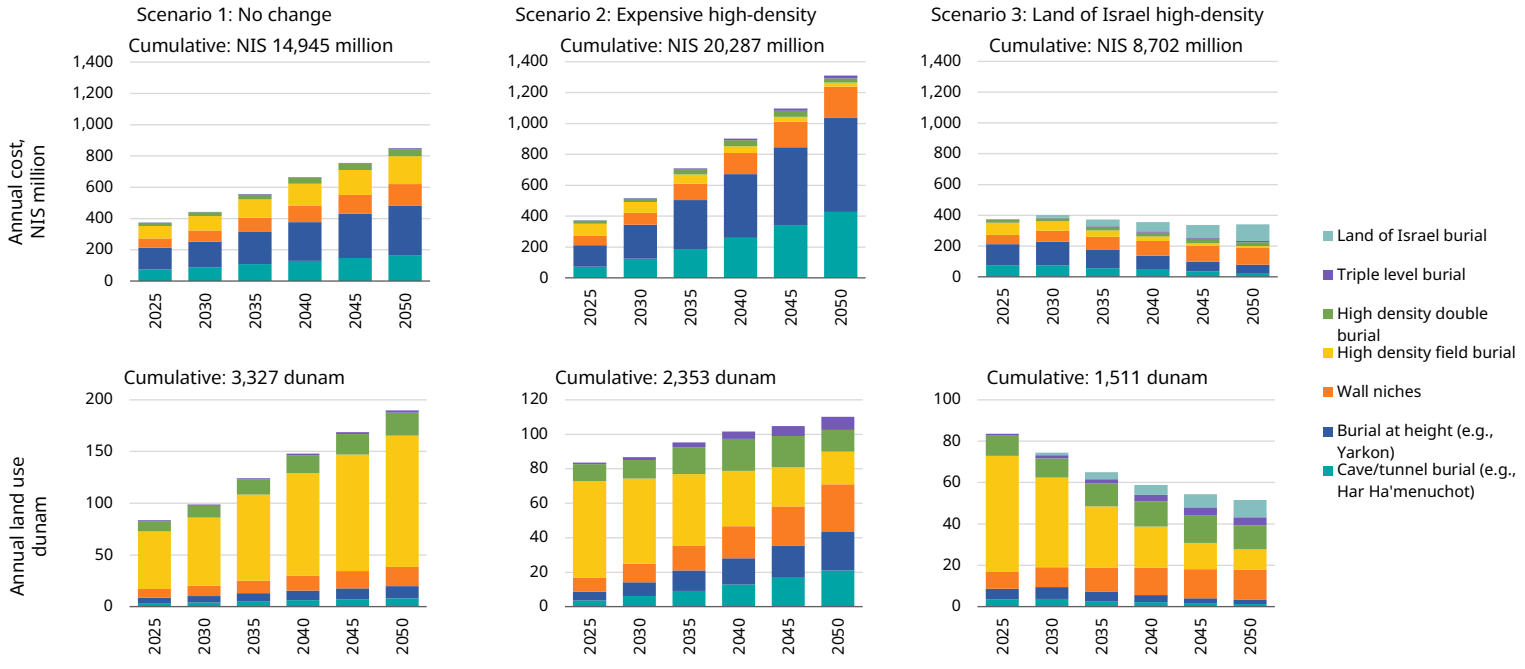
The estimates are graphed in Figure 6. The text box in each panel notes the cumulative financial and land use cost for all burials across the 2025–2050 period under each scenario.

As implied in Figure 6, there is a clear trade-off between financial cost and land use. Sticking with current distribution of methods (Scenario 1), annual public costs will rise to around NIS 800 million per year, with the cumulative expenditures between 2025 and 2050 amounting to NIS 14.9 billion. Over the same period, around 3,327 dunam will be used. A steady transition toward higher-density burial practices currently favored will save 974 dunam but will cost an extra NIS 5.3 billion (or NIS 5.4 million per dunam). That is not a trivial amount, but it is a product of the choice to use expensive forms of high-density burial methods, in particular multistorey and cave/tunnel burial. Switching to lower cost methods substantially reduces that extra burden. This is shown in Scenario 3, which demonstrates a reduction in both the annual cost and the annual amount of land used, despite constant increases in the number of burials.[19]

These estimates end in 2050. Yet as noted above, we expect around 2.2 million deaths in that period. The financial and land use implications of pushing these differences to the end of the century — with an expected 9.1 million additional deaths — are very substantial.

19 These estimates are conservative. They do not include savings on common externalities of many large building projects: pollution and corruption.

Figure 6. Simulated annual cost of burial (NIS millions, 2022 prices) and total land use (dunams), assuming no change in burial practice (Scenario 1) and a shift towards higher density burials (Scenarios 2 and 3), 2025–2050



Source: Alex Weinreb, Taub Center

D. Actual policy tends toward inaction

Both shifts in burial policy and actual burial practice have been comprehensively documented in other reports so we do not cover them here. For our purposes, it is sufficient to note that in spite of an initial government decision to move towards higher density practices in 1997,[20] a first governmental directive ordering high density burial in 2004,[21] and a series of government decisions pushing local authorities to shift towards high-density burial in 2009,[22] in 2014,[23] and in 2020,[24] actual movement towards higher density practices has been very slow, its progress hampered by the tension between two competing factors: sensitivity to anticipated *burial distress*, code for land pressure; and the religious sensitivity of burial practices.

This tension emerges clearly in SC reports (2020, 2024), which document how actual government action on burial practice has been delayed and even at odds with past government decisions. This is true at both the national and regional levels.

The SC has also documented the slow uptake of high-density burial in some of Israel's biggest cemeteries, alongside the frequent expansion of cemetery areas outside the authorized zones, including into areas designated for forestation, agriculture, or even into areas that are part of the national park system. This delay in uptake, and subsequent pressure to expand outside authorized zones, is often associated with religious and cultural resistance to the move away from field burials. That resistance continues, and is somewhat reflected in popular opinion (Finkelstein et al., 2022). In March 2023, the Planning Administration halted the progress of changes demanded by TAMA 1 in light of a government decision to establish a ministerial committee for burial matters. That committee established a principle according to which "it is preferable to use field burial in places where there is a demand for it in public." This principle openly and directly contradicts the goal of optimizing use of land, which was the guiding principle in all previous decisions (State Comptroller, 2024). In terms of Figure 6, it places Israel solidly between Scenario 1 and 2.

20 Decision 3057 [Burial] on 25.12.1997.

21 Decision No. Grave/9 of the Ministerial Committee on Burial from 08.08.2004.

22 Decision No. Grave/16 of the Ministerial Committee on Burial from 02.02.2009.

23 In Amendment 7 to the TAMA 19.

24 As part of TAMA 1, the new comprehensive master plan that effectively replaced many preexisting TAMA plans.

The delay in moving toward higher density burial is also a product of poor planning by local burial societies (*hevrot kadisha*). Beyond the delayed adoption of alternative burial practices within existing cemeteries, the SC reports have also documented the enormous delays in developing new areas. In its 2009 report, for example, the SC noted that the first steps of planning for a large cemetery in the Gush Dan region were taken in 1995 when the Israel Lands Administration, the public body responsible for managing state land, were asked to draw up plans for the Bareket mining area. As mentioned above, the first tender for planning, building and running Bareket was only issued in 2024, some three decades after the original request and two decades after the formal authorization of the plan.

A related problem: SC (2009) reported that only 17.5% of central government funds made available for cemetery development were used across the 2005–2007 period. More recently, SC (2024, p. 13) reported that as of August 2023, despite calls from Israel's planning commission to complete master plans related to burial by the second half of 2021, only the first of five stages had been completed in Tel Aviv/Central region, and nothing had been done in any of Israel's other districts. In light of these repeated and multilayered planning failures, the SC's overall conclusion in 2024 was that "The State of Israel is still not ready to deal with its growing burial needs."

5. Imagined futures

We have shown that between now and 2050, Israel will experience a rapid increase in the annual number of deaths as increasingly large cohorts enter their late 70s, 80s and beyond. We expect around 2.2 million people to die in that period. That is more than have died in the 76 years since the founding of the State. The annual number of deaths will continue to increase over the second half of the current century. We anticipate around 9.1 million deaths between 2050 and 2100. Together, our estimates exceed those of the SC by 2.8 million deaths (over the remaining 75 years of this century).

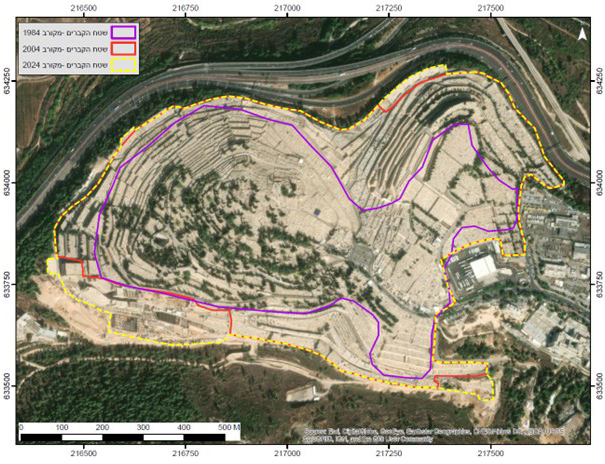
This much higher number of anticipated deaths also implies that the cost of delaying shifts in Israeli burial practice will be much higher than the SC currently envisages. Specifically, if Israel continues to allow large tracts of open land to be devoted to traditional field burial, increasingly large areas of the country will become necropoli (cities of the dead) in the full sense of that word. Moreover, because current law demands that a place of burial be close to the person's

place of residence, those necropoli will consume an ever-growing share of open land in the most densely populated and valuable areas of the country. Finally, because longstanding post-Talmudic interpretations of Jewish law demand that burial plots remain inviolable forever, that land will remain a cemetery for as long as the state exists. It will never be repurposed.

A. The Jerusalem Hills

As a thought experiment, it is useful to imagine what parts of Israel will look like. We focus on Har Ha'menuchot, first opened in 1951, now the main Jewish cemetery in Jerusalem, and currently housing the mortal remains of roughly 250,000 Jews on 600 dunam (about 416 graves per dunam). Illustration 1 is a map of Har Ha'menuchot in 2024, with the extent of the cemetery marked in 1984 and 2004 marked in purple and red, respectively. We can see that between 1984 and 2004, the expansion in Har Ha'menuchot occurred towards the north, west and south. In contrast, since 2004, the expansion has been almost all in the south, especially multi-storey towers to the southwest, since Route 1 prevents any further northward or westward expansion, and residential and business properties prevent further eastward expansion.

Illustration 1. Har Ha'menuchot cemetery, Jerusalem, 2024



Source: Yael Yavin, Taub Center | Data: Source: Esri, DigitalGeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Now look at Illustration 2. It presents two photos of Har Ha'menuchot taken from Mitzpe Hila in Mevasseret Tziyon. The top photo is contemporary. The bottom photo is an imagined extension of Har Ha'menuchot in 2100 — the average year of death (under current age-specific mortality rates) for a child currently in third grade. As an increasing number of the 700,000 Jews who currently live in Jerusalem die over the next 75 years, Har Ha'menuchot has crept down towards Motza, replacing the forest below Givat Shaul and Har Nof. It has also leapfrogged over Highway 1 and taken over agricultural land next to the Sorek river. Arguably, this is only the beginning. By the 22nd century, the cemetery will snake around Motza, turn west before Bet Zayit and then climb up toward Maoz Tziyon and the Castel.

Illustration 2.

Har Ha'menuchot cemetery, Jerusalem, viewed from Mevasseret Tziyon, 2024

Imagined view, 2100

Source: Leon Weinreb, Blackstrawman.com

Imagine equivalent pictures of now versus then in other places, and extending the *then* further into the future as Israel's population pushes beyond the projected 22 million residents in 2100. They will also eventually die. Where will future Israelis bury their mortal remains?

I would guess — though it is itself an empirical question — that most people living today do not want the images in these pictures to become reality. Even if they deeply believe in the importance of honoring the dead, and they consider cemeteries to be sanctuaries of collective memory that encourage people to consider their lives and purpose, they do not want the dead to crowd out the living, or cities of the dead to become more populous than cities of the living. It is also an empirical question whether they would be more willing to accept the *cities of the dead* decree if the sprawling cemeteries were converted into dual use solar farms — the Ministry of Energy and Infrastructure has proposed installing solar roofing over large municipal cemeteries, both to provide shelter for mourners, and to generate energy (Troen, 2025).

Perhaps if Israel's major metropolitan cemeteries looked like some of the Jewish cemeteries in Europe, the challenge facing Israeli policy makers could be handled differently. For example, the Jewish cemetery in Weissensee covers about 400 dunam (40 hectares) close to Berlin. Its counterpart in Warsaw covers 330 dunam. Both are now covered by relatively dense forest, turning them into much more ecologically heterogeneous zones than the austere stone, concrete, and treeless aesthetic that currently dominates Israel's largest civilian cemeteries — its military cemeteries, lined with trees and filled with flowers, are quite different.

That austere aesthetic likely reflects a more general difference in people's attitudes to cemeteries in other high-income countries relative to those in Israel. Many cemeteries in other countries have lawns and park benches. People who are unrelated to the dead visit them precisely because they are peaceful places to sit. They walk through them because they offer more attractive shortcuts than the sidewalk running alongside the road. Indeed, many large older cemeteries in the US have long had a joint function as arboretums (Buckley, 2024): they employ teams of tree specialists and gardeners. Some are now intentionally *rewilding* their landscape, substituting a more ecologically vital space for constantly manicured lawns. A version of this now practiced in the UK is known as "Woodland burial." A tree is planted at every grave, with the intention of turning low density cemeteries into forests (Peacock, 2013).

It is difficult to imagine these approaches being replicated in Israel's large municipal cemeteries given land constraints. Halachic restrictions could also play a part. For example, the *honoring the dead* in Jewish religious practice means that Jews are not supposed to eat, drink or sing in cemeteries. Nor are they supposed to *tease the dead* by doing other mitzvot that the dead can no longer do themselves (for example, learning, showing *tzitziyot*).

On the other hand, it is not inconceivable that such garden-type cemeteries could be developed, perhaps especially as a final resting place for familial ossuaries into which collected bones are deposited in the second stage of Land of Israel burials.[25] In this context it is worth remembering that one of the ways that non-Jews referred to Jewish cemeteries was as a *hortus Judœorum* (garden of the Jews). This may have been connected to greater aesthetic investments, as implied in Sanhedrin 96b, in which Amnon and Moab reportedly tell Nebuchadnezzar: "Their (the Jews) burial places (i.e., their burial caves) are superior to your palaces".

B. Some alternatives

What is clear is that two policy options adopted by other high-income countries to cope with burial crowding out other uses of land are not feasible in Israel, given Jewish and Muslim burial norms. These include: shifting towards cremation; and allowing for bankrupt cemeteries, especially older ones, to be repurposed. This means that other approaches must be taken.

Those alternative approaches are not limited to the options included in Table 5, even if we assume that some form of burial will remain the standard for the foreseeable future. To stimulate discussion, here are three alternatives to the options listed in Table 5. Each avoids Israeli cultural taboos about cremation, or allowing older cemeteries to be repurposed, including turning them into parks.

1) Privatize the provision of burial services

Following other high-income countries in privatizing the provision of burial services for all but the most impoverished — who can be buried at public

25 It is worth noting that Jewish and Muslim burials are already *green* insofar as they do not use embalming compounds or, for the most part, wood, allowing for easy and fast decomposition.

expense in the cheapest and most land-efficient way — would force people to bear the cost of their burial preferences, including the cost of perpetual land use. Of course, one downside of this practice is that it will enshrine socioeconomic inequality in death as much as in life. Today, those inequalities are difficult to see in Israel's cemeteries.

2) Relax the requirement that guarantees a burial close to the deceased's place of residence

This would make it possible for large cemeteries to be placed in the least inhabited and least inhabitable areas of the country. Imagine, for example, hills and cliff-faces of the Jordan valley and the Negev, including Machtesh Ramon. Millions could be buried in them. Such a move could also serve as an economic boost for ever-struggling areas in the periphery, perhaps even providing a further justification for extending the railway line south from Be'er Sheva, as mourners would need to travel to and from the center of the country. Recall that the Negev is projected to become even hotter over the coming decades, which may crowd out many other business opportunities but will certainly not bother the dead.[26]

3) Broaden the definition of available land

Israel could follow the Venetian example. The principal cemetery in Venice since the early 19th century has been on the Isola di San Michele, a small island to the north of the main Venice Island.[27] Israel could adopt similar practice if it constructed artificial *Islands of the Dead* off its coast, or the very least extended fingers of land, as it did with the extension to the Yovel port in Ashdod (Weiss, 2014). This is a new version of an old idea. Talk of artificial islands off Israel's coast dates to the 1950s, with more explicit plans circulating since the 1990s.[28]

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26 This option of a massive cemetery in little-used hinterlands also has historical antecedents. Notably, the largest cemetery in the world in the late 19th century was Brookwood, built around 35km from London. It remains the largest cemetery in the UK, though its 235,000 graves have already been outnumbered by Har Hamenuchot. In 1854, a dedicated train line to Brookwood from Central London — literally called the Necropolis line — was opened to transport coffins and mourners from the city to one of two stops in the cemetery (one for Anglicans, the other for all other denominations).

27 Venice is not alone. As noted earlier, more than one million New Yorkers are buried on Hart Island's public burial ground.

28 See Zalul website, Artificial Islands.

Usually, these plans include residential and hotel areas, sometimes with an airport. Arguably an Isle of the Dead is a much simpler proposition since, to put it simply, the dead do not require the same quality of infrastructure as the living.

Conclusion

Many Israelis take great pride in the country's high fertility and rapid demographic growth, seeing these as signs of demographic vitality and Jewish resurgence after the massive losses of the last 200 years or 2,000 years. Even when some observers have articulated concerns about the impact of all this growth, it has tended to focus on classic ecological questions such as Israel's carrying capacity, energy consumption, and quality of life; or on compositional shifts within Israel's population that some observers consider threatening.

In this paper, we point to a very different and little discussed endpoint of Israel's rapid demographic growth: the rise in number of deaths. Our analysis plays on a simple mathematical identity that underlies demographic accounting: putting aside migration, the number of deaths must eventually equal the number of births; and where net migration is positive, the number of deaths must eventually exceed the number of births.

Israel is facing the second of these scenarios. An inevitable consequence of our unusually high population growth is the compensating growth, at some later point in time, in the number of deaths. But what makes this particularly challenging is the combination of a religious-cultural imperative to bury everyone alongside political decisions that the state will cover burial costs, offer a spot close to home, and forfeit any other use of that land forever. To the best of my knowledge, this approach is absolutely unique in the world. No other country, let alone high-income welfare state, offers its citizens such generous provision into the grave.

Our main empirical goal here has been to highlight the costs of this approach, both financially and in terms of land use, given the anticipated number of deaths. Broadly, we have shown that every year that policy makers choose not to change current practice, they gift an additional share of the country to the dead, alienating it away from the living and from future generations. That is not only an odd reversal of standard values shared by all well-run countries,

in which the elderly are supposed to give to the young, and the dead are not supposed to take from the living. It is also particularly damaging in Israel since the residential distribution of Israel's population alongside the regulation that a grave must be offered close to home means that Israel is disproportionately gifting some of the country's most valuable land to the dead.

We have followed others in pointing to more economical options in terms of both land use and cost, in particular niche burials and Land of Israel burials. We have also enumerated other options, especially those made possible by forcing people to bear part of the cost of the grave, or by relaxing the requirement of proximity. In either case, it is important to recognize that the current standard, in which those who die today take land from future generations, evolved in a time and place where there were far fewer Jews, where their level of autonomy was restricted, their welfare was in the oft' unreliable hands of antisemitic rulers, and where land was much more plentiful. None of those factors holds in contemporary Israel.

Recognizing these shifts in context would be a useful first step in redirecting Israeli burial practices towards a more morally defensible and economically sustainable model in which the elderly give to the young, the dead give to the living, and burial practices developed in, and for, the exigencies of exile, are jettisoned. As of now, Israel's burial policy is uniquely and unrealistically generous. Israel's policy makers must embrace more sustainable alternatives.

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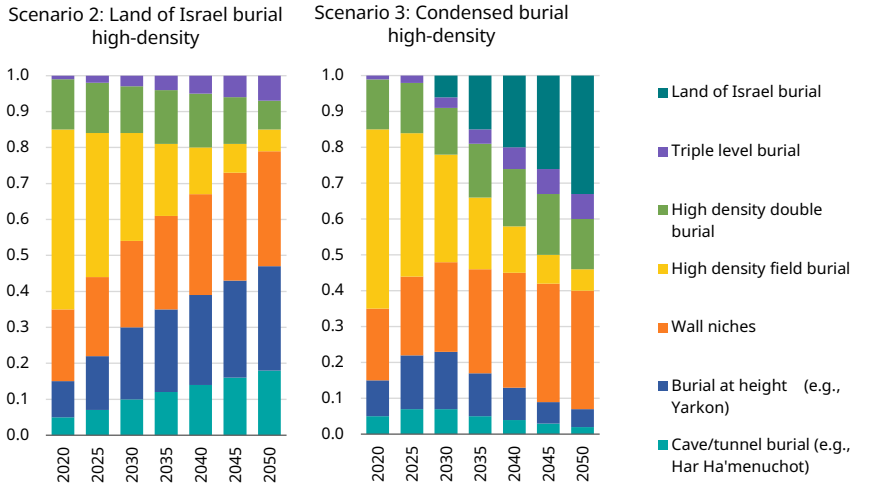
Appendix

Appendix Figure 1. Assumed distribution of burial, by type, 2025–2050



Notes: Based on the estimates presented in Figure 6 above. Scenario 1 assumes that the rate of use of each method remains constant at its estimated level in 2025.

Source: Alex Weinreb, Taub Center