

POPULATION DYNAMICS AND SUSTAINABILITY IN THE ISRAELI CONTEXT

Navigating between demographic warfare and Malthusianism*

Yaakov Garb

Summary

This essay examines population dynamics as an environmental issue in Israel in light of Agenda 21's broadly integrative approach to the subject. Israel's national planning policies treat population growth rates as a driving variable, to be predicted but not altered; this amounts to internalizing a pro-natalism that is deeply entrenched and broadly consensual, manifest in a range of policies and measures. With Israel not managing many of the impacts of its current populations, the doubling of population size every three decades or so surely merits consideration.

Until recently, the environmental community has not dared challenging this consensus by broaching population as an environmental issue. As it does, however, it is important that treatment of the issue draw on the hard-won insights of the population-environment debate that has evolved elsewhere over recent decades. In this spirit, the essay discusses population as only one contribution to growing and unsustainable environmental impacts, which are due in large measure to increased consumption. In the long term, fertility rates must surely drop; in the short and medium term, however, high-consumption low-fertility lifestyles may be as harmful as low-consumption high fertility ones. The essay also warns of the political tensions that surround and threaten to infiltrate demographic debates in Israel. It concludes with some proposed guidelines for tackling the population/consumption/environment issue in Israel in a way that is both

*This essay derives from a more extended research project in progress, conducted under the auspices of the Jerusalem Institute for Israel Studies. That research is summarized in a manuscript referred to as the "JIIS report," currently under review, and available from the author. For the sake of brevity, footnote material in the JIIS report has been omitted or shortened in the essay below. Meira Hanson ably assisted me in this research, which bears the imprint of her excellent insights and hard work.

environmentally committed yet preserves the holistic development view of Agenda 21.

Introduction

The treatment of population issues in Agenda 21 and Israeli national planning

Chapter 5 of Agenda 21 calls for developing and disseminating knowledge on the links between demographic trends and factors and sustainable development, and taking these into account in national policies and local programs.

In its muted tones and emphasis on the interaction of multiple factors, Agenda 21 is a far cry from some of the early classic environmental statements (Paul Ehrlich's 1968 The Population Bomb, for example), which identified population growth as the "ultimate threat to humanity." Reflecting developments in the discussion of environment and population in international fora, Agenda 21 never places population growth on the table in isolation, but always as a component of a larger complex of issues, notably increased production and unsustainable consumption patterns, and within a context of broad equity and gender concerns.

Israel's official response to this component of Agenda 21, in its "Draft Review and Assessment of Progress in Implementing Agenda 21 in Israel," dodges even these rather tame proposals. Thus, the sum total of policy treatment of the topic in the Israeli document reads as follows:

In light of Israel's unique demographic patterns, population concerns are integrated into national planning policy and decision-making. The Central Bureau of Statistics provides updated information on demographic trends, and land-use master plans take account of the implications of demographic trends on development needs and environmental protection.

As a summative description of policy consideration, "integration" and "taking into account" have a lot of slack in them. Were these trends and impacts considered in the sense of "taken into account of and accommodated to" or in the more normative sense of "scrutinized with an eye to acceptance or rejection?" And which environmental dimensions were considered, and how?

In fact, if we examine the kind of land use master plans referred to by the Review's (non) statement on demography and environment, we find that this "consideration" is of the most general and inert kind. In the country's major

national planning documents (such as the National Outline Plans *NOP31* and *NOP35*, and the *2020 Master Plan*), population is a driving variable, like the climate, to be anticipated carefully, but not altered. Thus the “population” section of these plans is solely an attempt to provide reliable demographic inputs to other sections of the plans (transport, infrastructure, population distribution, housing needs, employment, agriculture, social needs, macroeconomics, etc.).¹ Demographic predictions assume the continuation of current pro-natalist policies.

The augmentation of Jewish population size as a national priority

The implicit pronatalism of Israeli national planning documents should be no surprise. A pronatalist policy has long been a part of the country’s national strategy, and a host of concrete policy measures reflect a commitment to augmenting the population of the Jewish majority through high birth rates and immigration. The measures supporting large families and thus increasing population size include child allowances, and family-size linked aid in housing, discounts on municipal property taxes, aid for working mothers, health tax payments, prenatal and postnatal aid, alleviation in army reserve duty, and pro-natalist family planning. In addition, there is extensive encouragement of and support for Jewish immigration. One of the most debated levers of pro-natalism is the Large Families Law, which grants parents rising allotments for children: for the fifth child five times that which they receive for the first child, and two and a half times what they receive for the first two children together.

It is important to be more ethnically precise about Israel’s pronatalism. The motivation seems to be augmentation of Jewish rather than overall population size. This bias is explicit (as in the case of encouragement and support of Jewish immigration only), or through coded exclusion mechanisms. The Jewish State’s sense of urgency in augmenting Jewish populations must be seen in historical context. When it was established in 1948, the country was reeling from the genocidal loss of a major portion of worldwide Jewish populations—the 6 million European Jews murdered in the Holocaust a few years prior. And the country was struggling to establish itself and survive in a hostile setting, where it was far outnumbered numerically. In addition, the high birth rates of Arab populations in Israel and its neighbors were perceived as a threat. Thus expanding Jewish populations became a largely consensual national goal, and has remained so until the present.² The JIIS report on which this essay draws describes in more detail the importance placed on demographic engineering by both sides in the Arab-Israeli

conflict, and demonstrates that what is usually true in most contexts is inescapable in the Israeli one: to talk demography is to talk politics.

The historic absence of a population–environment debate in Israel

Because of this deeply entrenched and broadly consensual pronatalism, even the markedly high population growth rates in Israel—a doubling of population every two or three decades—were not raised as a topic of environmental concern until very recently. This despite the ebb and wane of “population” as a key environmental concern internationally. Even when raised by environmentally-minded people, the concern over impacts of Israel’s population growth has been tempered with great realism about the prospects of modifying these trends through policies.

For example, a 1996 review by one of Israel’s foremost environmental journalists of various environmentalist stances on the environmental implications of population growth, and its implications for water resources, touches almost entirely on ways to accommodate and plan wisely for this inevitable growth. This journalist claimed that:

among planners and politicians, there is currently a growing awareness of the problem of population growth, alongside almost complete agreement that there is no national justification, nor practical possibility, to change the rate of population growth from above.

It is only in the last few years or so that there have been some voices willing to brave the taboo against considering policies to restrain population. Now some lone environmental advocates have dared to softly raise the calls for population control that are (or, rather, were) a standard component of the environmental agenda in many other countries.

I talk in the past tense about population control as a key element of western environmentalism, since the U.S. environmental movement has stepped back considerably from the population apocalypticism of the 70s. Some regard this as a cowardly “politically correct” retreat from the foundational place of population in any environmental agenda.³ But it is probably more accurate to see this (also) as a retreat in the face of the growing complexity of making population–environment claims to more sophisticated policy audiences. A watershed in the conceptualization of thinking about the linkages between population, environment, and development was the 1994 Cairo Conference on Population and Development. The conference changed the landscape of the population debate by giving prominent expression to

scholars and advocates who in the years leading up to the conference had emphasized the relation of women's well-being to population growth rates, Neo-Marxist critiques of Malthusianism, and the emphasis by developing countries on the role of over-consumption, rather than over-population as a key environmental threat.

Goals of this essay

Whether one regards this shift in international population discourse since the 70s as maturation (as I do), or retreat, the more nuanced debate on population in recent decades is not echoed in the nascent claims raised in the last few years in Israel. As detailed in my JIIS essay, the first recent public arguments about population size as an environmental concern in Israel have been made in terms that seem drawn from a far earlier era of population discourse. The reaction to these claims is similarly crude, dismissing them as scandalous, unthinkable, and contrary to core national values.

Thus in contemporary Israel we find, on the one hand, a consensual nationalistic pro-natalism and support for immigration that regards anything else as heretical; on the other, there is a danger that the first environmentalist attempts at placing the subject on the discussion table will be starkly reductionist, not reflecting the hard-won lessons of extensive debate on this topic.

This essay attempts to navigate between these two extremes. It uses Agenda 21's call for action on the topic of "Demographic Dynamics and Sustainability," (as well as the related call on "Changing Consumption Patterns") to carve out a space--between taboo and reductionism--in which these issues might be discussed given Israel's unique circumstances and sensitivities.

Thus it navigates between two poles of concern. On the one hand, there is little reassuring evidence that the region has demonstrated its capacity for dealing tolerably with the environmental impacts of current populations. In its absence, this essay rejects the unreflective adoption of purely extrapolative demographic scenarios in Israeli plans, and the belief that Israel's environmental regimes do and will continue to address environmental pressures.⁴ Given stressed systems in most spheres (contamination of aquifers, inadequate toxic and solid waste disposal, the rapid consumption of open spaces, and many others . . .), the burden of

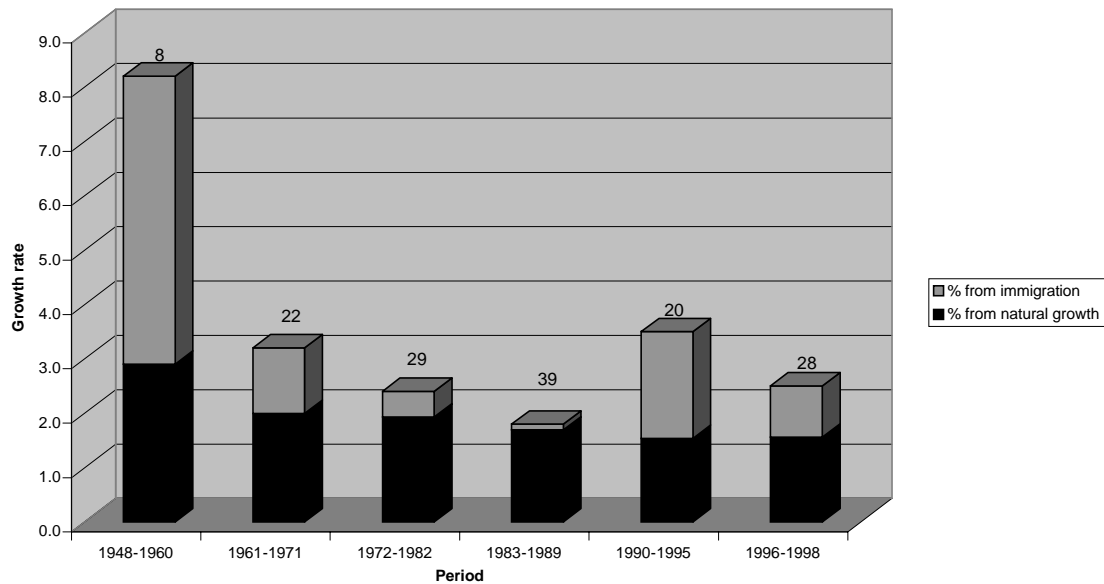
proof that future larger populations will be accommodated is upon those who plan under the assumption that within a generation there will be 10 million people within Israel's borders and 15 million between the Jordan and the Sea. At the same time, however, I urge that this reflection incorporate several lessons of the demographic-environmental debate over the last decades, such as those voiced at Cairo. Finally, the essay cautions that analyses of these issues must avoid the likely leakage of various national, ethnic, and religious tensions into well-intentioned "environmental" discussions of demographic trends.

Demographic trends

Israel's population has grown from 1.2 million at its founding in 1948, to over 6 million. As the graph below shows, overall annual growth rates have been consistently above 2%. These are more characteristic of less developed countries than of developed countries, whose growth rates are typically a tenth of this: on the order of 0.2%. The graph illustrates the dramatic demographic consequences of even a couple of percentage point difference in growth rates, as evidenced by the hypothetical doubling times indicated above each bar in the graph.

Israel is unique, however, in combining population growth rates typical of developing regions with the consumption characteristics of developed countries. Thus, while the average total fertility rate of an Israeli woman is 1.2 children more than a British one, Israel's per capita GDP is not that much lower than the United Kingdom's (\$18,400 versus \$22,000), and its annual per capita CO₂ production (9.7 versus 8.9 metric tons) and electricity consumption (5.5 versus 5.3 kilowatt hours) are slightly higher.

Israel's high fertility is only part of its high population growth rate. As the graph shows, natural growth has remained fairly constant over the history of the state, with a substantial and varying portion of overall growth due to immigration. Even with no immigration, Israeli society would face the tremendous task of accommodating a population that doubles every 40 years or so.



Israel's average annual rate of population growth, with corresponding doubling time (in years) above bars. Derived from data from the Central Bureau of Statistics.

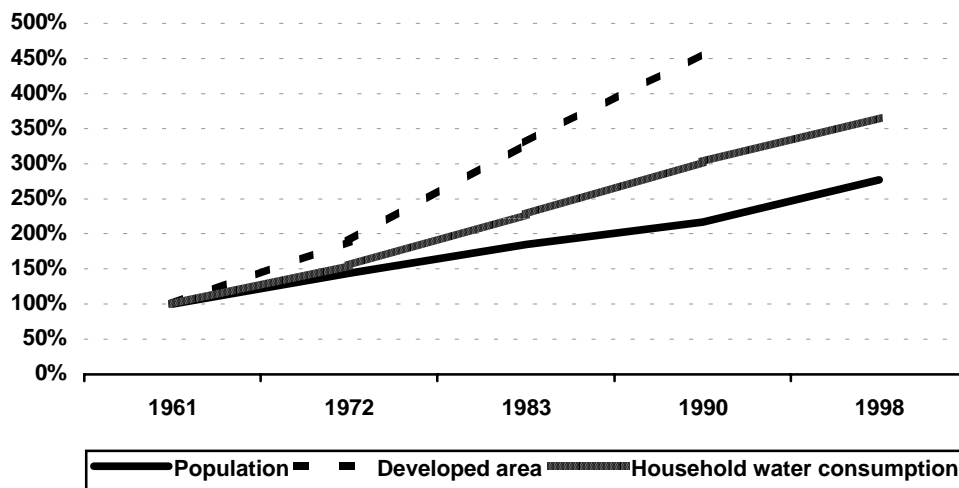
A point that recurs in this essay is that fertility is far from uniform with Israeli society: sub-populations such as the ultra-orthodox and some portions of the Arab population have far higher fertility levels, and from this stems much of the political valence of demographic issues in Israel. While it is hard to imagine how current aggregate population growth rates could be sustained, discussion about the environmental imperative for its reduction must disaggregate the various trends and sectors that contribute to environmental impacts.

Population–consumption tradeoffs

As other chapters in this anthology testify, the environmental impact of current Israeli populations is already excessive in many dimensions. All things being equal, the environmental stresses on a region are a direct function of the number of inhabitants. But all things are not equal. Impact is a function not only of numbers of people but of how these people live; and various sub-populations live differently. Thus environmental impacts must be disaggregated for time period, kind of impact, and in other ways.

Disaggregation by kind of consumption

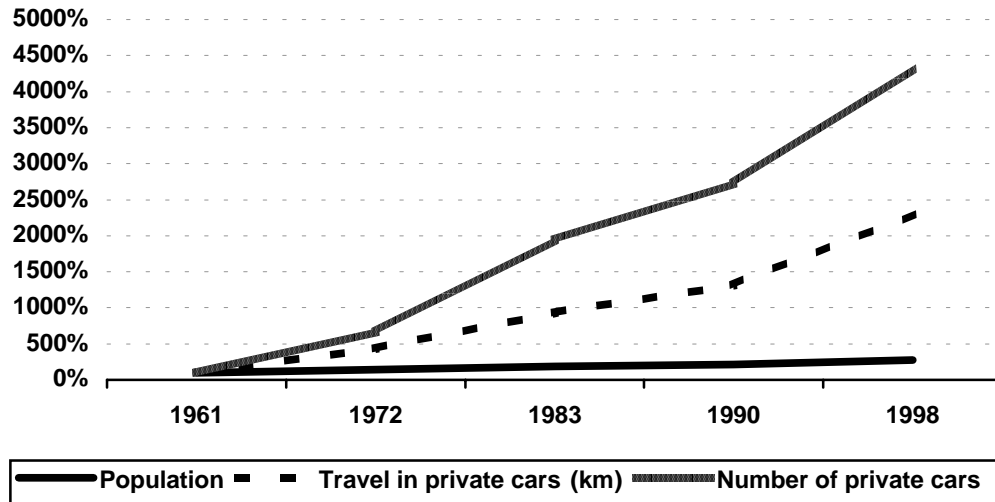
During Israel's last 4 decades, the massive expansion of population size (more than a doubling), was only a part (in some cases a small part), of the growth of this population's environmental impacts. The graphs below show some measures for which consistent national-level statistics are available. Developed area and household water consumption, for example, have grown at a rate significantly faster than would be expected simply from growth in the number of people. In spheres such as land development, then, rising consumption levels (or the increase in "ecological footprint") should be considered as least as significant a "problem" as rising population.



Growth in population and consumption since 1961

There are surely realms in which the past growth of environmental impact is primarily a function of growing population, and these should be identified. And others, in which the effect of population growth is literally negligible compared to the impact of lifestyle/technological changes.

Take, for example the rise of mass motorization in Israel: a revolution that reworked space at neighborhood, municipal, and national levels, and greatly



increased urban exposures to air pollutants. As the graph below strikingly indicates, the environmental impacts of private transport are predominantly the result of this revolution in lifestyle, rather than population growth. Some of the most comprehensive projections of future car ownership and use rates till 2020 indicate that this steep growth will continue, at rates far in excess of population growth.

Growth in number and use of private cars (note uneven spacing of time axis)

It has been argued that population growth is critical precisely because consumption levels are rising: each additional person currently causes much larger impacts than 4 decades ago. The logic behind this claim is revealing. It rests on an implicit sense that the growth in consumption levels is somehow a more “natural” and unstoppable process than population growth. (After all, one might argue the reverse: that because populations are so much larger now, it is critically important to freeze or reverse the growth in individual consumption.)

As discussed in the JIIS essay, there are spheres (such as car ownership) where population increase has contributed only a small part (in this case one third) of the growth, and others in which it is more dominant. And, of course, given the exponential nature of population growth, a pulse of population growth will have a long-lived multiplicative effects a generation

later. But in several important spheres, the growth in environmental impacts over the coming 50 years may be predominantly a function of changes in technology and lifestyle.

Thus the environmental impacts of future population growth must be disaggregated by the type of impact. Where broad adoption of a new consumptive technology or lifestyle has already run its course, or when a consumptive technology is in a phase of significant efficiency gains, population growth will have greater weight in its overall environmental impacts.

Disaggregation by social sector

A second kind of disaggregation is necessary when considering the contribution of population growth rates to environmental impacts: by sectors within Israeli society. This is necessary because subpopulation growth rates and consumption levels (and thus per capita environmental impact) are quite different.

For example (to continue the transportation emphasis), the 13 settlements (of population over 2,000) with the highest levels of motorization rate (mostly wealthy neighborhoods and/or suburban settlements) have an average motorization rate six times the average in the bottom 13 (which are mostly Arab, Ultra-orthodox, or "development towns."). Similarly large ratios hold with respect to other indicators of consumption for which we have settlement-level data; for example, average water consumption in the top-consuming eight towns is four times that of the bottom eight).

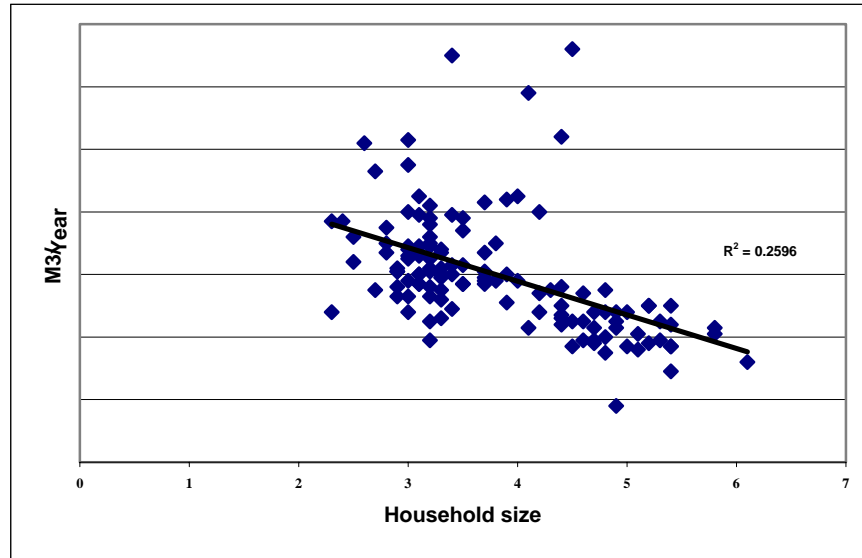
Settlements with the highest and lowest household water consumption in Israel

Town	Average water consumption (cubic meters)
Kfar Shmaryahu	156
Kochav Yair	132
Omer	130
Meitar	118
Macabim/Reut	104
Ramat Hasharon	103
Eilat	102
Herzlia	95
AVERAGE	117.5

Town	Average water consumption (cubic meters)
Mashad	37
Beitar	37
Magar	36
Um El Fahem	35
Tel Sheva	32
Kasra	30
Boayna	29
Arara	18
AVERAGE	31.75

These disparities in consumption level shape household consumption far more than the number of people in the household. Thus, we cannot argue against large households on the basis that they create more environmental impact. At the most, the claim might be made that they contain the potential for higher impact in future generations, once each of the many children creates their own household—an important claim that is discussed below. But within the current generation, at least, larger households actually consume less than smaller households.

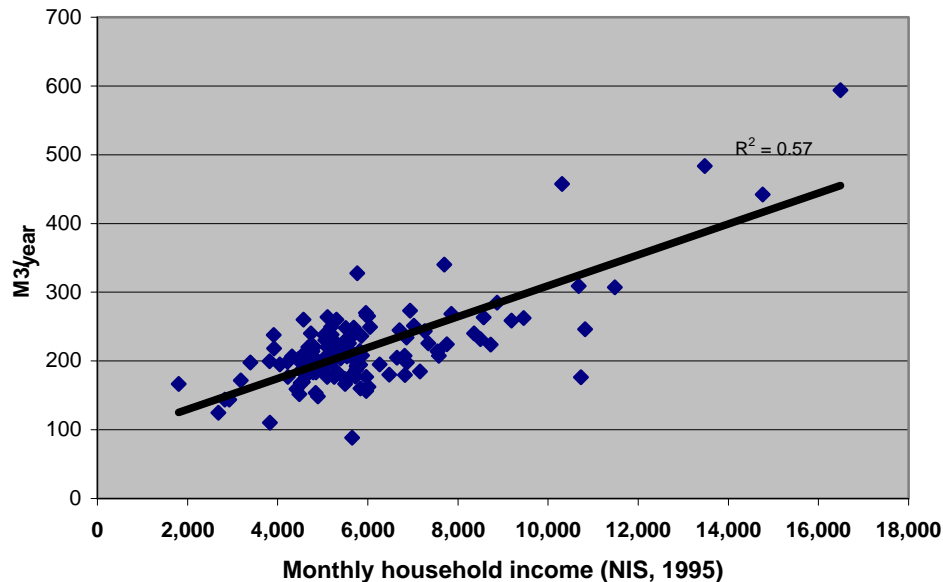
Household water consumption has a small negative correlation



to average household size in Israeli towns

This argument may seem paradoxical, until we consider that household size and household income tend to be slightly inversely correlated. It is because they tend to be poorer that larger households consume less. For example, as the graph above shows, there is a weak inverse correlation between household size and household water consumption.

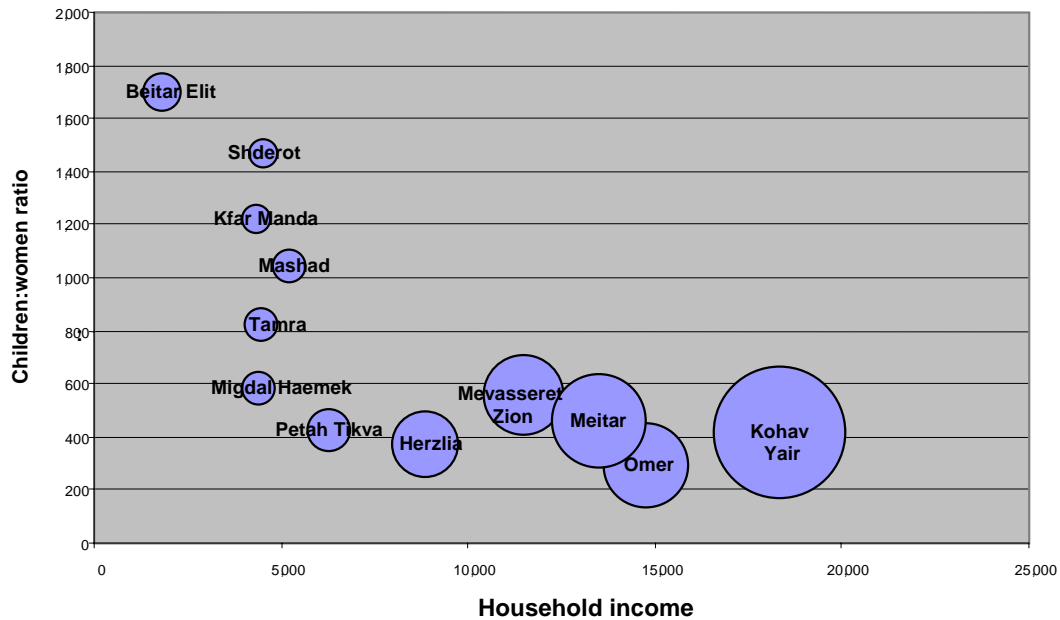
On the other hand, household income is a strong correlate of water consumption, as shown below.



Household water consumption has a strong positive correlation to household income in Israeli towns

Similar correlations hold for other consumption variables for which statistical information is available.

To graphically illustrate the relative insensitivity of household-level consumption to fertility, and its considerable sensitivity to income, I have created an aggregate consumption index derived from those consumption measures available in the Central Bureau of Statistics (CBS) statistics for localities. These statistically available measures (average household car ownership, clothes dryer presence, and water consumption) can serve as proxies for overall consumption. The graph below shows this index for some familiar settlements, which have various fertility levels but a similar income (the vertical strip), and others that have similar fertility levels but varying levels of income (the horizontal stripe). The radius of the bubbles represents the value of this composite consumption index.⁵ An increase in average fertility (and presumably household size) does not raise this household-level consumption. An increase in household income does.



Composite *consumption* index (bubble radius) as a function of household *income* (shekel a month) and *fertility* (children to women ratio, a fertility measure derived from census data).

But what about the impacts of the future households that will issue from large families?

While a large family's environmental impacts are less, on average, than those of a smaller family, surely this will rapidly be negated as the many children in large families set up their own households? An eight child household might consume less than a two child household now. But surely the sixteen (four times four) households (four times four) a large family is likely to produce in two generations (50 years) must consume more than the single household yielded by a family with replacement fertility (of slightly over 2 children)?

However, even a crude modeling of this self-evident proposition, turns up some interesting findings, when sub-population consumption levels are taken into account. This is because the high-fertility sectors of Israeli society (primarily ultra-orthodox (Haredi) and Arab communities), are also low consumption. If policies are to be symmetrical with respect to both

kinds of contribution to environmental impact (the number of people and how they live), then the implications of altering each must be considered.

While carefully done, these findings are not presented as extensive models. They are intended to illuminate the rough contours of the dynamics involved—as a thought experiment. These can raise for discussion some of the hidden assumptions and intuitions that must be tested explicitly and rigorously if population is to be placed on the public policy agenda. The modeling is done for the time period up to 2050, which is probably the limit at which foresight ends and science fiction begins.

Let's take, for example, the policy imperative often implicit within environmentalist population concerns: reduce Haredi (ultraorthodox) fertility to the current secular levels. A sober policy analysis must check carefully whether this reduction is warranted on environmental grounds, and its feasibility and impact compared with other kinds of policy measures.

What are the environmental gains of reducing Haredi fertility levels? We have already seen that large households consume slightly less than smaller ones. But what about the longer term? The top right scenario in the diagram below shows a modeling of high Haredi fertility gradually dropping to the “desirable” replacement levels of the secular population over the next 50 years. This results in a small but not exceptional drop in overall environmental impacts.

Other scenarios are also instructive. Spectacular environmental gains are made if non-Haredi consumption levels gradually drop to the current low levels of the Haredi community, whether or not Haredi fertility drops or not (the right and left middle scenarios shown below, respectively.) Of course, if Haredi fertility remains at its current high levels, with Haredi consumption beginning to rise to secular levels, (the bottom left scenario in the figure below), environmental impacts rise, literally, off the chart.

An interesting scenario, illustrated in the bottom right of the diagram, occurs when Haredi fertility gradually drops to the “desirable” replacement levels of the secular population over the next 50 years, but over the same period the currently low levels of Haredi consumption gradually rise to match (high) secular levels. We see that a scenario of Haredi fertility reduction combined with consumption equalization yields no environmental gain relative to the business-as-usual scenario (depicted in the top-left).⁶ In other words, replacing Haredi lifestyles (high fertility/low consumption) with secular ones (lower fertility/high consumption) would not reduce

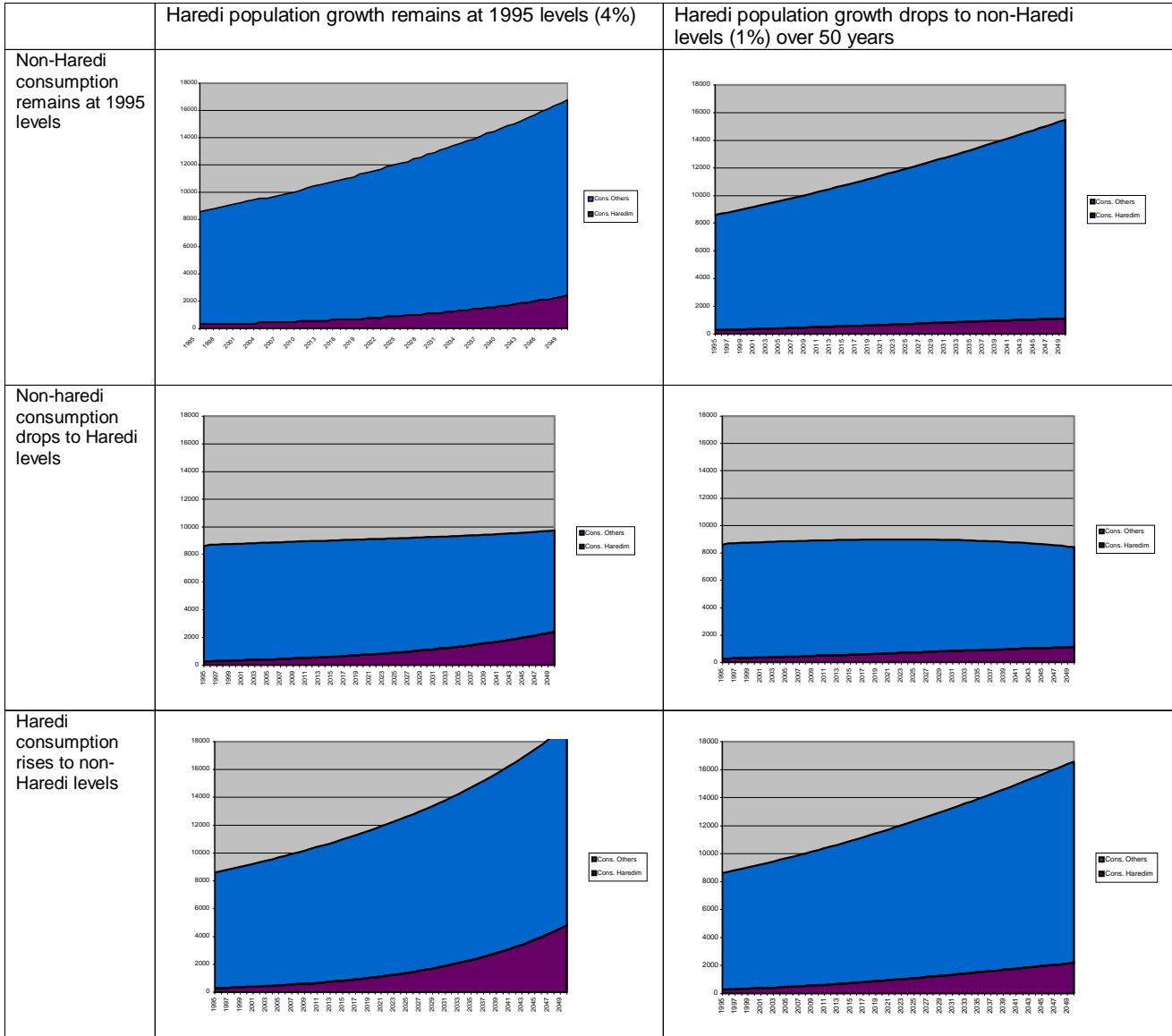
environmental impacts in the foreseeable future (by 2050). Lowering Haredi fertility only “works” environmentally if we assume Haredi consumption remains at levels far below non-Haredi levels.

This latter raises important empirical (and perhaps ethical) questions. To what extent is low Haredi consumption a product of high fertility, which will disappear if and when fertility drops; and to what extent is it an outcome of culture that gives priority to communal life, spatial proximity (especially on Sabbath, when car travel is impossible), and non-material values. Is high Haredi fertility “bought” through low consumption? Do environmental considerations allow adjudication between one community that regards relatively high levels of consumption and (lower fertility) as natural, and another that regards high fertility “voluntary simplicity” as a norm--or should the issue be settled only in the political sphere?

These results show that despite its “intuitive” appeal, Haredi fertility reduction may not necessarily lead to significant environmental gains over the coming 50 years, which is about as far forward as it is reasonable to conjecture. They point, in fact, to other adjustments of lifestyle—namely reduced consumption levels—that might have far more consequence over this period. (Note that reduced consumption can occur through reduced demand or through more efficient production of each unit consumed.)

A similar situation holds with respect to the reduction of fertility of the non-Jewish (Arab) population, whose consumption is also considerably below Jewish secular levels.

While the modeling is crude and preliminary, the findings are robust enough to alert us to the fact that public-policy prescriptions for the coming decades must attend to the consumption side of the equation as seriously as to the fertility side.



The environmental consequences of various hypothetical permutations of adjustments in Haredi and non-Haredi fertility and consumption levels. The area-graphs depict consumption/impact (with Haredi consumption below, in darker tones). A 2:1 per capita consumption ratio between non-Haredi and Haredi is assumed, as discussed in the JIIS report.

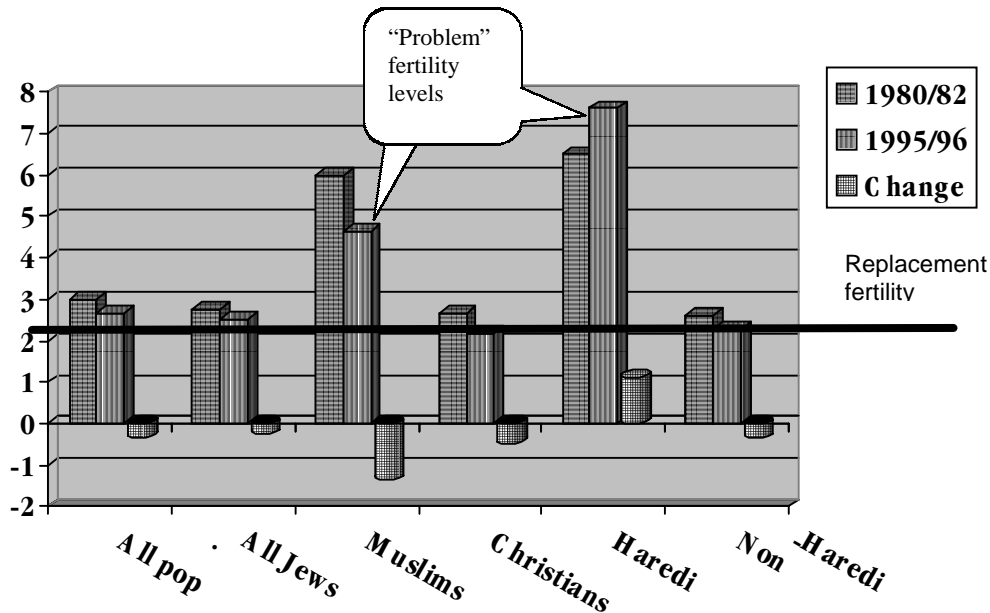
Political leakages into environmental–demographic debates

From Malthus onwards there has been a tendency for social tensions (ethnic, religious, class) to find expression in demographic terms. (Malthus' anxieties about Poor Laws in England, as viewed from his particular location in English society, were neatly masked behind the seemingly self-evident logic of his claims about the arithmetic growth of food sources, versus the geometric growth of population.) And in countries around the world, “demographic engineering” of various kinds (pronatalist policies, involuntary and induced assimilation, forced population movement, boundary alterations) is a long-standing extension of inter-ethnic conflicts, and of the struggle for control of territory and its resources.⁷ This should make us think twice and three times about demographic claims, the social location of the claimants, and the social and political anxieties they might represent.

This is especially true in Israel, where demographics has been and remains an implicit, and often brazenly explicit, element of the conflict between Israel and its Arab neighbors, of the relations between the Jewish majority and Arab minority within Israel, of Jewish secular-ultra-orthodox relations, and in the not-so-distant past of social tensions between North-African and Ashkenazi Jewry.

In such a context, it is exceedingly important to make sure that these preoccupations and biases don't infiltrate into a seemingly neutral discussion of the environmental need for reducing population growth rates. For besides being analytically inadequate, a simplistic call of “too many people” could become a dangerous flag to be raising in a region fraught with ethnic and religious tensions.

The immediacy of this danger is evident from the simplest breakdown of the subpopulations whose fertility levels exceed replacement levels (the dashed line slightly over 2, in the graph below). This immediately casts the “demographic problem” as a “Muslim” and “Haredi” (ultra-orthodox) problem, so that these two minorities are the natural and immediate target of “population control” policies. (Indeed, one might also question the statistical dichotomy of Haredim/non-Haredim itself.)



Subpopulation fertility levels (After Berman, 1988).⁸

This background should make us vigilant that the political and social anxieties that pervade political life in this region do not infiltrate into environmental discourse. There may be temptations to add ecological claims as one more kind of ammunition to the quite explicit attempts to restrain the growth rates of Arab and Haredi sub-populations. These attempts stem from political anxieties about the growing electoral power of the subpopulations (Arabs and Haredim), their dilution of the Jewishness of the state and potential as a Fifth column (Arabs), and resentment at their “parasitism on the productive elements of society” through “not contributing to the economy” or serving in the army. Thus, Dr. Dan Ben-David, who teaches in Tel Aviv University’s Public Policy program, warns of the trajectories that are carrying the country to a point of no return, including the fact that⁹

. . . [H]alf of all children in the first grade are enrolled in the ultra-Orthodox and Arab educational systems. Given the disproportionately high birth rates of these two population groups, is it not clear to their leaders where this trajectory is leading them and us—and at what rate? Who in the next generation will be able to finance these combined populations at the current level?

Whatever the validity of these kinds of concerns about fertility differentials and the relative contribution to society of different of different sub-populations, the point of this essay is that caution is due before *ecological*

arguments can be legitimately added to the concerns about the faster-growing portions of Israeli society. Environmental analysts must put out the message: Battle high population growth rates on political, economic, family health, social, or geo-strategic grounds, if you will; but think twice before you clothe these concerns as environmental imperatives.

Some conclusions and recommendations

By way of conclusion, I propose the following rough contours of a responsible approach to the “population” issue in Israel. (In fact, one main message of this essay is that “population” should not be raised as an isolated issue, but considered as part of the complex social-technical-demographic realities that lead to rising environmental impacts.) These interlocked guidelines are offered as a starting point for further development and debate.

The current unsustainability of Israel’s environmental impacts, and their projected rise in a business-as-usual scenario must be analyzed and squarely faced.

While some argue that Israel is muddling towards sustainability, or at least toward a modicum of a sustainable development program,¹⁰ or that Israel’s national plans could, in principle, accommodate continued large population growth rates¹¹, a strong case can be made that despite its programmatic declarations the country is failing to manage the environmental impacts of its current population along many important dimensions.

To the degree that Israel’s environmental policy-regulation-enforcement regime is not containing environmental impacts of its *current* population/consumption levels within tolerable limits, the burden of proof is upon planners and policy-makers to demonstrate how and by how much these impacts will drop, especially in the light of projected increases in both population and per capita consumption levels. Some serious back-casting is needed, which begins with the minimal tolerable future standards in many spheres, and works backwards to the steps needed from now onwards in order to reach them. These may contain both population and consumption elements, subject to the qualifications that follow.

Current and projected environmental impacts must not be taken at an aggregate level, but differentiated by the various dimensions of environmental stress (motorization, toxic and solid waste generation,

agricultural land conversion, etc.), by which portions of the population contribute to and suffer from these, and by where they occur.

This is important because some environmental systems are more stressed than others; in some irreversible changes might result from these stresses; in some realms, the technologies of production and consumption seem stable, and population growth will be the main driving factor, while in others changes in lifestyle or economic landscape will be key; in some spheres (some kinds of vehicle emissions), great gains can be made through technological improvements, but not so in others; and so on

In particular, the consumption/population equation must be explicated in key dimensions of impact; in many of these, the majority of the growth in impact over recent and coming decades is probably due to rises in consumption, not in population size.

This is not to negate the impact of population growth, which can be significant, only to say that the trade-offs between the two must be considered. What are considered normal Western (i.e. high consumption) lifestyles cannot be entertained even at current population sizes, much less at larger populations. However, the populations that are growing fastest do not, at this point, have such lifestyles. Thus, in the short and medium term, it would be mistaken to lay the onus of lifestyle change primarily at the door of high fertility, rather than high-consumption sub-populations, or to tackle growth trends in one sphere rather than the other. At the same time, populations with high fertility lifestyles should be aware that the relative environmental innocuousness of these is “bought” through very low per capita consumption levels. Pricing that reflects the true (inc. external) costs of consumption would go a long way to conveying both messages.

Population growth stems from immigration, as well as natural growth.

This is important to remember for several reasons. First, as an earlier graph illustrated, the (unlikely) massive waves of immigration, of the kind hoped for by some decision-makers (including Prime Minister Sharon), would lead to doubling times that are truly fantastic, rather than merely worrying. Second, discussion of population management will challenge not only the ideology of large families, but the equally strong ideology of Israel as a refuge for all Jews, and free Jewish immigration. Third, it further diffuses the focus on Haredi and Arab fertility levels: a large portion of recent population growth over the last decade has stemmed from (the immigration of) an entirely different sector.

Decision-makers and opinion leaders must be more aware of the time-lags involved in reversing the demographic and consumption trends currently underway.

Were fertility levels to begin dropping tomorrow, the impacts of the large families of today would still be felt for decades during which the many children in large families reach childrearing age—even if the number of children they themselves produce are smaller. This impact would be especially large were the lowering of fertility accompanied by rises in consumption among offspring of existing large families. Similarly, were an improved technology or land-use pattern to become “available” today, it would take decades (and in some cases, centuries) before the existing stock of consumptive technologies were abandoned.

Changes in fertility levels in the most high-fertility subpopulations are likely to occur as the result of a range of broader social, cultural, and economic dynamics, and perhaps fairly independently of explicit government attempts to alter fertility.

For example, non-Bedouin non-Jewish fertility dropped quite significantly and steadily from 1940 to 1980, even as Bedouin fertility rose on average over this period. Among Jews, the stark dichotomy between Ashkenazi and Sephardi fertility levels that prevailed until the mid fifties has been much reduced, while religiosity and nationalism have become more significant factors in fertility levels. These trends occurred without any differentials in the prenatal incentives (such as child subsidies) applied to subgroups, but for a variety of not fully understood historical, cultural, social, and broader economic reasons. Thus, removing subsidies for large families might be both less needed and less effective than it may seem “intuitively.”

Fertility levels in the Haredi population, for example, may be more likely to change as a result of internal dynamics than through external manipulation of narrow economic incentives. This is because the relative impact of child subsidies--much less of environmental exhortations--on fertility decision-making may be smaller than the effects of other forces. These include a broader range of pressures faced by a community with a doubling time of 17 years, and changes in the status of women. The internal stresses of the last couple of decades of high Haredi fertility in Israel are just now becoming apparent as this community grapples for the first time with the sometimes crippling burden of providing for the marriage and household establishment of its 8 or 9 offspring. Similarly, the tensions between working outside the home to support a husband devoted to full time learning, and raising a large

family are being felt by Haredi women, and will increasingly to the degree that they have the training and opportunities for income that competes with even the generous levels of child subsidy. Child subsidies may modulate these stresses to some degree, but the amplitude of this modulation (i.e. the effectiveness of subsidies as a policy lever) remains an open question. For this reason . . .

To the extent that future population growth rates are a target for policy, they are likely to be better approached obliquely, through integrated package of social programs that emphasize augmenting, rather than constraining, the freedoms, choices and opportunities of current generations. In particular, measures that increase the status of women (in general and in particular subgroups) and their reproductive rights and health (such as availability of and freedom to use contraception), are not only inherently valuable, but will tend to make fertility less prone to ideology.

In the words of Agenda 21,

[Population policies] should combine environmental concerns and population issues within a holistic view of development whose primary goals include the alleviation of poverty; secure livelihoods; good health; quality of life; improvement of the status and income of women and their access to schooling and professional training, as well as fulfillment of their personal aspirations; and empowerment of individuals and communities.

Analyses of population issues in Israel must take into account the sensitivities of all sub-populations in Israeli society, who have historically been exposed to various kinds of demographic losses or demographic manipulations.

Population policies that seem like a continuation of manipulation for political ends, or that constitute a frontal collision with broadly consensual ideologies, are unlikely to get anywhere, and are not a wise expenditure of environmentalist ethical and political capital. Some equally effective avenues open to environmentalists wishing to reduce future environmental impacts are pricing consumption at its true (social/environmental) cost, and working for the broad social changes that make demographic warfare a less necessary and appealing option for subpopulations to adopt.

Population analyses must also be scrupulous in ensuing that political agendas do not leak into deliberations under the guise of objective environmental considerations.

I think this essay has shown that the intuitive obviousness with which certain demographic trends or interventions present themselves as environmental solutions can and should be questioned.

Notes

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- ¹ If there is any attempt to influence, rather than only predict, demographic trends contained in all these plans, it is implicit in the obsessive attention to the ethnic ratios of populations at national and regional levels—a topic discussed more extensively in the JIIS report.
- ² Some argue that Israeli policies also embody a less ardent but still discernable commitment to reducing Arab population growth.
- ³ Roy Beck and Leon Kolaniewicz, “The Environmental Movement’s Retreat from Advocating U.S. Population Stabilization (1970–1988): A First Draft of History.” Manuscript.
- ⁴ Eran Feitelson (1998), “Muddling Toward Sustainability,” *Progress in Planning*, Vol. 49.
- ⁵ Interestingly, the L-shaped curve here still holds when all CBS localities are plotted: it is rare to find high-income high fertility localities.
- ⁶ The modeling is based on a ratio of 2:1 between secular and Haredi consumption (and thus environmental impact) levels. Of course in some spheres (sewage production), the per capita impact will be similar, while in others (per capita car ownership) the ratio will be far higher than 2:1. Further details of the modeling, and the original spreadsheets are available from the author.
- ⁷ Milcia Zarkovic Bookman, *The Demographic Struggle for Power: The Political Economy of Demographic Engineering in the Modern World* (London: Frank Cass, 1970).
- ⁸ Eli Berman (1998), *Sect, Subsidy, and Sacrifice: An Economist’s View of Ultra-Orthodox Jews*, The Jerusalem Institute for Israel Studies. Christian and Muslim figures are taken from population registry, whereas others are from labor force survey (LFS), and there is some discrepancy, due to under-sampling of the Muslim population in the LFS.
- ⁹ The figures are drawn by Ben-David from “a report by a committee headed by Dr. Zvi Zameret (director of Yad Ben Zvi) at a recent conference in Herzlia.” Dan Ben-David, “Asleep and drifting toward the falls,” *Ha’aretz*, March 15, 2002, page B6 in the English edition.
- ¹⁰ E. Feitelson (1998), “Muddling Toward Sustainability,” *Progress in Planning*, Vol. 49, pp. 1–53.
- ¹¹ Eran Feitelson (1994), “Allowing for Sustainable Growth Under Drastic Immigration Stress in Israel,” *Journal of Environmental Planning and Management*, 37(4), pp. 379–394.