



מאגר מחקרים במדעי הרוח והחברה אודות משבר האקלים בישראל ובמדינות השכנות

איסוף וכתיבה: יונת ריין-ספיר, המחלקה לגיאוגרפיה ובית הספר המתקדם ללימודי סביבה, האוניברסיטה העברית בירושלים

[\[yonat.rein@mail.huji.ac.il\]](mailto:yonat.rein@mail.huji.ac.il)

ייעוץ וליווי:

ד"ר לירון שני, האוניברסיטה העברית בירושלים

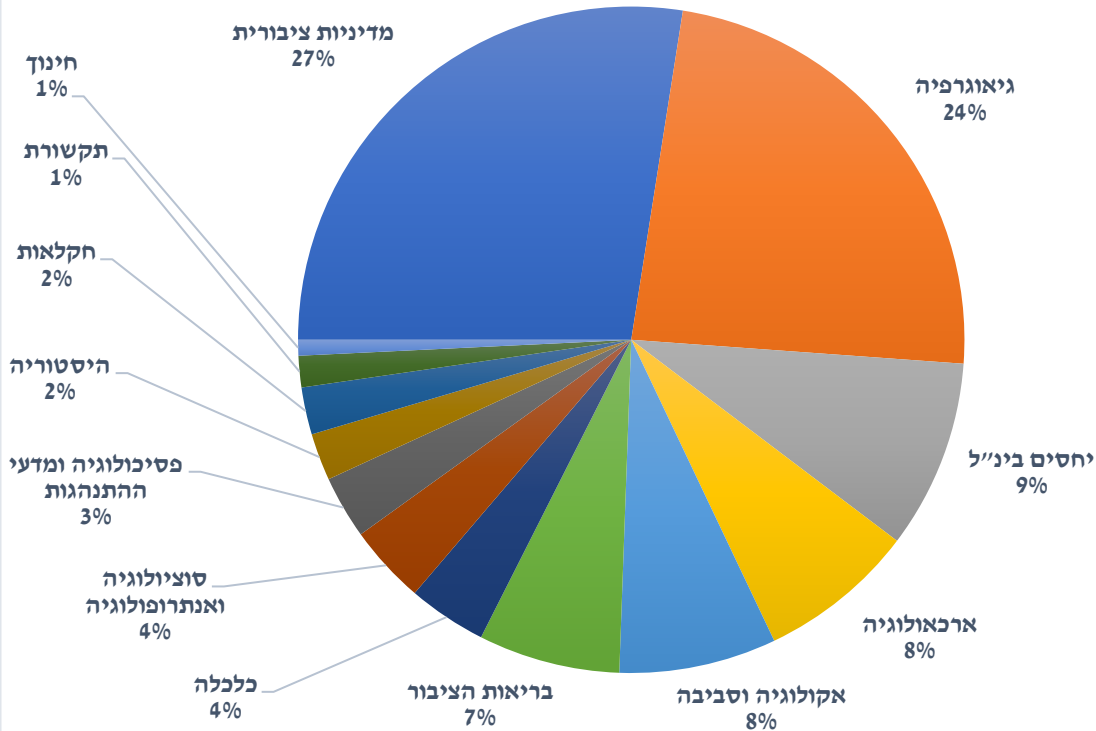
ד"ר איתי גרינשפן, האוניברסיטה העברית בירושלים

כחלק מתהליך הלמידה והתיעוד של המחקר אודות משבר האקלים בישראל ובשכנותיה במזרח התיכון, יזמנו מהלך לתיעוד המחקר שנערך עד כה בנושא, על ישראל ו/או על ידי חוקרים ישראלים. לשם כך, נסקרו מאגרי מידע, דו"חות ופרסומים רשמיים שקובצו להלן למאגר מידע בנושא. במאגר ניתן למצוא פרספקטיבות מחקריות מתחומי הדעת השונים במדעי החברה והרוח על משבר האקלים. המאגר להלן אינו בהכרח ממצה. הוא תופס את המידע שנאסף נכון לינואר 2021, ומשמש נקודת התחלה לאיסוף נתונים אלה לאורך זמן. להוספת מחקרים, הערות ושאלות, ניתן לכתוב לנו במייל: mashberaklim@gmail.com

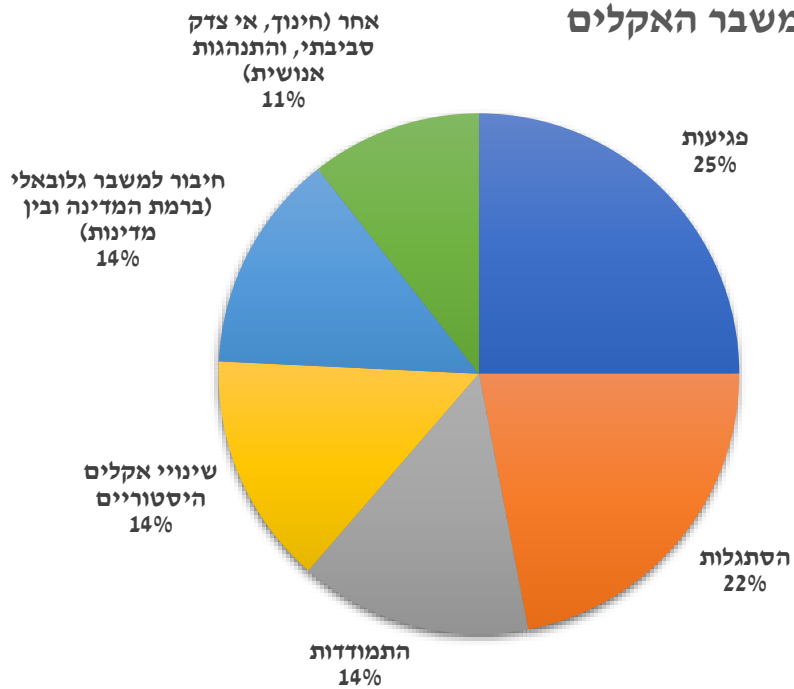
תודות: לוועדה המארגנת, הכנס הישראלי הראשון לחקר משבר האקלים במדעי הרוח והחברה; לבית הספר המתקדם ללימודי סביבה, האוניברסיטה העברית בירושלים.

מאפייני המאמרים

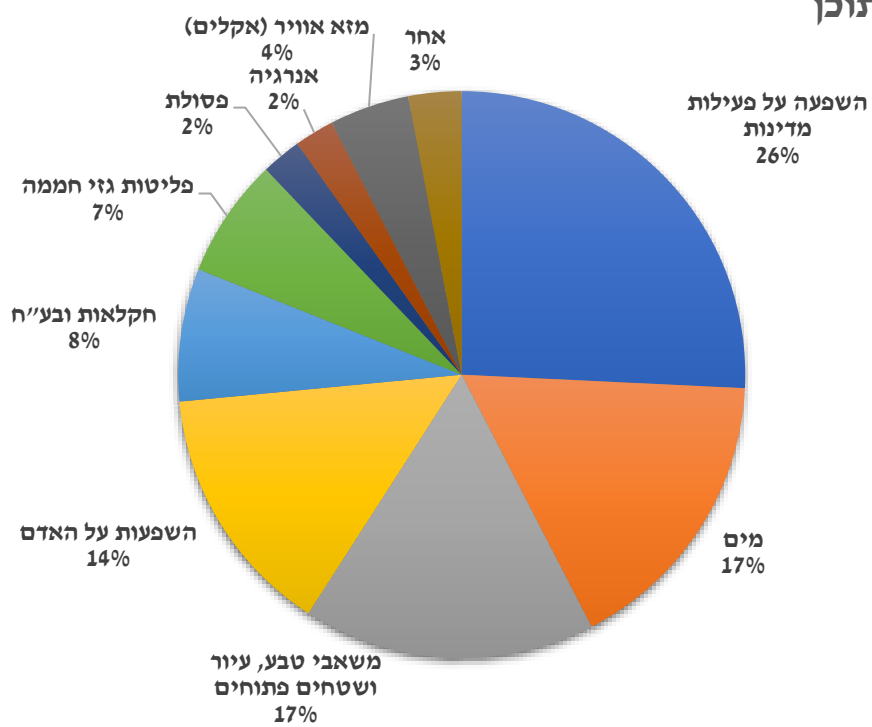
ספרות משבר האקלים - ישראל, לפי דיסציפלינות



גישה למשבר האקלים



נושאי תוכן



English List of References

1. **Allentuck, A., & Rosen, A.M. (2019). The risky business of keeping pigs during periods of climatic fluctuation: A case from the Mid-Holocene Near East. *Journal of Archaeological Science: Reports*, 24, 939-945.**

Category: Archaeology. [Link](#)

The climate record of the Mid-Holocene southern Levant indicates a period of rapid climate change and erratic rainfall. An unpredictable rainfall regime would have posed a considerable risk to societies dependent upon crops and livestock that require a plentiful and consistent supply of water. In this paper, we first examine an assemblage of pig remains from Hartuv, a small settlement occupied during the Early Bronze Age, and then interpret these data alongside palaeohydrological evidence. We reconcile seemingly contradictory data-high relative taxonomic abundance of pigs and climatic conditions characterized by a general aridification trend and rainfall instability-by considering zooarchaeological assemblages from nearby sites in the context of their hydrological settings. On the basis of geoarchaeological evidence from Hartuv, we conclude that the effects of variable rainfall were mitigated by a locally marshy environment and an anthropogenic landscape feature, which may have been used to store water.

2. **Alpert, P. (2004). The water crisis in the E. Mediterranean—and relation to global warming?. *In Water in the Middle East and in North Africa* (pp. 55-61). Springer, Berlin, Heidelberg.**

Category: International relations. [Link](#)

There is an on-going debate in Israel on the current political background of the water crisis with Lebanon whether the water shortage in recent years in this region has to do with global warming. On the face of it the analyses of temperature as well as rainfall trends are not in agreement with global warming trends. It is the purpose of this Note to show that the observed changes can indeed be linked directly to global warming predictions.

3. **Anker, Y., Mirlas, V., Gimburg, A., Zilberbrand, M., Nakonechny, F., Meir, I., & Inbar, M. (2019). Effect of rapid urbanization on Mediterranean karstic mountainous drainage basins. *Sustainable Cities and Society*, 51, 101704.**

Category: Geography. [Link](#)

Transformation of permeable natural areas into impervious surfaces (e.g. roads, parking lots, and buildings) is altering the watershed response to precipitation, generating bigger runoff volumes with increased peak discharges. The runoff travels faster to the watershed outlet, accumulates, and might cause flooding. Urban areas are affected by flooding, with consequences that might result in severe economic damage and even hazard to life. The paper will estimate the effect of rapid urbanization on runoff and on groundwater recharge. The model includes the Shiloh catchment basin located in a karstic mountainous terrain in Israel for a time period of rapid development from 1978 to 2018. Evaluation of surface permeability was based on land-use classifications from Landsat datasets using the Q-GIS 3.4 platform. Multiyear runoff coefficient estimation was calculated based on annual runoff and rainfall series. The evaluation suggests natural permeable areas were constantly declining from about 400 km² (nearly 100% of the Shiloh basin) in 1978 to about 100 km² in 2018 and that nonpermeable areas increased to 95 km² and semi-permeable areas to 250 km². Despite annual precipitation decrease during the last two decades, the annual runoff coefficient has a pronounced tendency to increase. This research suggests that the anthropogenic impact on the Shiloh basin and, hence, similar watersheds encourages runoff accumulation, resulting in extreme flood events recurrence while significantly reducing the groundwater recharge.

4. **Ayalon, O., Avnimelech, Y., & Shechter, M. (2000). Alternative MSW treatment options to reduce global greenhouse gases emissions: The Israeli example. *Waste management & research*, 18(6), 538-544.**

Category: Public Policy (Energy). [Link](#)

In order to comply with the Kyoto Protocol agreements, Israel has to assess all the sources contributing to greenhouse gases (GHG) and analyze the alternative options to reduce these emissions. The waste sector in Israel contributes 13% of total GHG emissions for a time horizon of 100 years (for a time horizon of 20 years, the waste sector contribution equals more than 25% of total GHG emissions). Mitigation options from the waste sector, as well as the costs associated with each alternative, show that the most cost-effective means to treat the degradable organic components of waste is by aerobic composting (investment of less than 10 US\$ to reduce emission of 1 t of CO₂ equivalent per year). The environmental basis for regulating landfill gas (LFG) flares should be based on the potential damage of GHG emitted from landfills. The economic rationale in the additional investment needed to recover energy from the LFG will be partially covered by income from energy sales. The ultimate goal is to minimize the amount of methane by converting it to CO₂, this can be done most effectively by incineration. But, compared with other technologies, this is the most expensive option. Steps taken to minimize GHG emission from the waste sector should play a significant role in the short- and medium-term. The considerations used here apply to many other countries worldwide as well. It seems that a proper waste management may be one of the immediate and available means to mitigate GHG in the short- and medium-term.

5. **Ayalon, O., Avnimelech, Y., & Shechter, M. (2001). Solid waste treatment as a high-priority and low-cost alternative for greenhouse gas mitigation. *Environmental Management*, 27(5), 697-704.**

Category: Public Policy (Energy). [Link](#)

The increased concern about environmental problems caused by inadequate waste management, as well as the concern about global warming, promotes actions toward a sustainable management of the organic fraction of the waste. Landfills, the most common means to dispose of municipal solid waste (MSW), lead to the conversion of the organic waste to biogas, containing about 50% methane, a very active greenhouse gas (GHG). One unit of methane has a global warming potential of 21 computed for a 100-year horizon or 56 computed for 20 years. The waste sector in Israel contributes 13% of total greenhouse gases (GHG) emissions for a time horizon of 100 years (for a time horizon of 20 years, the waste sector contribution equals to more than 25% of total GHG emissions). The ultimate goal is to minimize the amount of methane (CH₄) by converting it to CO₂. This can be achieved by physicochemical means (e.g., landfill gas flare, incineration) or by biological processes (e.g., composting, anaerobic digestion). Since the waste in Israel has a high organic material content, it was found that the most cost-effective means to treat the degradable organic components is by aerobic composting (investment of less than US\$ 10 to reduce emission of one ton CO₂ equivalent per year). Another benefit of this technology is the ability to implement it within a short period. The suggested approach, which should be implemented especially in developing countries, could reduce a significant amount of GHG at relatively low cost and short time. The development of a national policy for proper waste treatment can be a significant means to abate GHG emissions in the short term, enabling a gain in time to develop other means for the long run. In addition, the use of CO₂ quotas will credit the waste sector and will promote profitable proper waste management.

6. **Ayalon, O., Lev-On, M., & Lev-On, P.P. (2015). Greenhouse gas emission mitigation plan for the State of Israel: Strategies, incentives and reporting. *Climate Policy*, 15(6), 784-800.**

Category: Public Policy. [Link](#)

In the context of the negotiations under the United Nations Framework Convention on Climate Change and its accompanying Kyoto Protocol, participating nations have recognized the need for formulating Nationally Appropriate Mitigation Actions (NAMAs). These NAMAs allow countries to take into account their national circumstances and to construct measures to mitigate GHG emissions across economic sectors. Israel has declared to the UN that it would strive to reduce its GHG emissions by 20% in the year 2020 relative to a business as usual' scenario. With its growing population and an expanding economy, the national GHG mitigation plan was developed to draw a course for steering the Israeli economy into a low-carbon future while accommodating continued economic growth. The article describes relevant policy measures, designed to aid in the implementation of the plan and compares them with measures being undertaken by different countries. Emphasis is placed on analysing the progress to date, opportunities and barriers to attaining the ultimate GHG emissions reduction goals. The objective of this article is to contribute to the knowledge base of effective approaches for GHG emissions reduction. We emphasize the integrated approach of planning and implementation that could be especially useful for developing countries or countries with economies in transition, as well as for developed countries. Yet, in the article we argue that NAMAs' success hinges on structured tracking of progress according to emerging global consensus standards such as the GHG Protocol Mitigation Goals Standard. Policy relevance: The study is consistent with the NAMA concept, enabling a country to adopt a climate action plan' that contributes to its sustainable development, while enabled by technology and being fiscally sound. The analysis shows that although NAMAs have been framed in terms of projects, policies, and goals, current methodologies allow only the calculation of emission reductions that can be attributed to distinct projects. Currently, no international guidance exists for quantifying emissions reduction from policy-based NAMAs, making it difficult to track and validate progress. This gap could be addressed by an assessment framework that we have tested, as part of a World Resources Institute pilot study for an emerging voluntary global standard.

7. **Ayalon, O., Lev-On, M., Lev-On, P., & Goldrath, T. (2014). Greenhouse Gas emissions reporting in Israel: Means to manage energy use. *Energy conversion and management*, 85, 612-618.**

Category: Public Policy. [Link](#)

The subject of publicly disclosing Greenhouse Gas (GHG) emissions by companies and organizations is gaining momentum and a variety of so called 'GHG Registries' have been developed in countries around the globe, while specific requirements are being adjusted to local circumstances and needs. Different GHG Registries are currently operating worldwide, either as mandatory or as voluntary programs. Israel launched a voluntary initiative in 2010 known as the Israel GHG Reporting and Registering System. The Israel GHG Reporting Protocol was prepared by the Ministry of Environmental Protection and the Energy and Environment cluster at the Samuel Neaman Institute, in cooperation with a wide range of stakeholders, including other governmental ministries, industry and local government representatives as well as non-governmental organizations. The Israel GHG Protocol is largely based on the World Resources Institute/World Business Council for Sustainable Development (WRI/WBCSD) corporate accounting standard and ISO 14064. While the decision to join the GHG registry in Israel is currently voluntary, once an organization has joined the registry it commits to calculate and report GHG emissions according to the registry's protocol and methodology guidance to allow for consistency in the reported data and for accurate comparison of the results. The Israeli program is intended to help develop capacities and tools for organizations, industry and various other private sector entities to manage their GHG emissions by annually calculating and

submitting their emission inventories which will also help them to estimate the potential for emissions reduction. This paper focuses on the analysis of the GHG emission reports submitted for 2010, 2011 and 2012 by participating companies and organizations and on how these data enable the reporting organizations to develop their databases, improve their risk management capabilities and identify opportunities for energy and process efficiency improvements that could lead to GHG emissions reduction.

8. **Baruch, H.G. (2007). Impacts of global environmental change for water resources of Israel and its neighbors: New security dangers and shifting perceptions. In *Water Resources in the Middle East* (pp. 357-378). Springer, Berlin, Heidelberg.**

Category: International Relations (Law). No link.

The chapter argues that the conceptual ideas of David Mitrany, George Marshall, Jean Monnet, as well as of Mikhail Gorbachev were instrumental for 60 years of peace and security in Europe, for integration, overcoming the Cold War and contributing to the reunification of the continent. The chapter contrasts different security perceptions of narrow national security threats with a widened security concept that includes economic, societal and environmental dimensions and other levels of analysis and referents, with a special focus on human security. However, given the primary concern with the dangers confronting their 'national security', in the countries of the 'narrow' Middle East (Israel, Palestine, Jordan, Egypt, Lebanon and Syria), the emerging new common threats, challenges, vulnerabilities and risks for the environment and the people in these countries are not yet being widely perceived. In the second part, the regional impact of global environmental change is projected until 2100 and potential extreme outcomes are discussed for the narrow Middle East. These environmental challenges are not yet perceived as common threats. A special focus is on water demand due to population growth, urbanization and food needs, and on the changing supply due to the impact of climate change on precipitation, soil erosion, drought and desertification in the region. The chapter suggests that these common challenges to human security should become an object of functional cooperation within the region, and that these efforts may contribute to long-term environmental conflict avoidance.

9. **Baum, Z., Palatnik, R. R., Kan, I., & Rapaport-Rom, M. (2016). Economic impacts of water scarcity under diverse water salinities. *Water Economics and Policy*, 2(01).**

Category: Public Policy (Economics). [Link](#)

Exploitation of alternative water sources is expected to grow in the decades to come in water-stressed countries with fast population growth, especially in regions where a further decline of natural freshwater availability is expected due to climate change. Increasing utilization of non-freshwater usually leads to salinity build-up in fields and water sources as well as accumulation of various pollutants - both having a considerable impact on the suitability of non-freshwater for irrigation due to constraints associated with crop salinity tolerance and food safety regulations. We developed a linked Computable General Equilibrium (CGE) - farm-level model of a water economy with representation for multiple water types characterized by different qualities. We employ the model to assess the impact of water shortage on the Israeli economy, where steadily growing water scarcity leads to an increasing utilization of alternative water sources. We simulate water shortage scenarios based on the Long Term National Master Plan for The Water Economy developed by the Israeli Water Authority (IWA). The linked CGE - farm-level model provides a mechanism for estimating the Constant Elasticity of Substitution (CES) rates between different irrigation water types used in agriculture. This mechanism accounts for the effects of salinity on yields and takes into consideration food safety regulations for irrigating crops with treated wastewater. We demonstrate that, in contrast to previous studies, CES rates between different water types are not identical. The CES rates obtained in our study have relatively low values, which can be attributed to the constraints associated with crop salinity tolerance and food safety regulations. Our results reveal that water shortage can lead to a significant decline of Israel's GDP, where a considerable part of the decline is attributed to the decrease in agricultural outputs. The magnitude of the impact depends on the underlying

assumptions regarding future desalination capacity. To further study the effect of desalination, we run simulations under various desalination levels and examine its impact on the GDP. We also examine the extent to which the impact of water shortage is sensitive to CES rates between different irrigation water types.

- 10. Belmaker, M. (2009). Hominin adaptability and patterns of faunal turnover in the Early to Middle Pleistocene transition in the Levant. In *Sourcebook of Paleolithic Transitions* (pp. 211-227). Springer, New York, NY.**

Category: Archeology. [Link](#)

The Levant is one of the key regions to document hominin dispersal from Africa into Eurasia. The number of dispersals, continuity of populations within the region, and the role of the region as a corridor or as a 'cul de sac' are focal questions in understanding the scenario of early hominin adaptability in the Lower Paleolithic, and specifically, during the transition between the Early and Middle Pleistocene. Mammalian taxa differ in their ability to respond to ecological change. While some have a low threshold for climatic and environmental change, others can tolerate a wide range of habitats. Humans are highly adaptable to a wide range of habitats. Nonetheless, local distribution of populations and settlement patterns may be affected by environmental change. To understand transitional patterns in early hominin populations, we must place them within the context of the environment in which they lived. This paper describes the faunal turnovers that occurred during the Early to Middle Pleistocene transition of the Levant and discusses the relationship between these changes and the distribution of human populations in the region. The presence-absence of fauna at ten Levantine archaeological sites was analyzed using the range through method. A sharp faunal turnover is apparent at the Brunhes-Matuyama boundary (0.78 Ma). Minor turnover events may be present at the Jaramillo paleomagnetic episode (1.1 Ma) and at the mid-Brunhes climate event (0.43 Ma). Despite variability in lithic assemblages among sites, all Early Pleistocene lithic traditions are within a similar cultural milieu (Levantine Acheulean). However, following the faunal turnover of 0.78 Ma, there is an appearance of a novel cultural tradition, which is associated with a new dispersal event out of Africa and the local disappearance of earlier Levantine Paleolithic cultures. This suggests that while local populations of hominins were able to withstand small level climate shift (i.e., the Jaramillo and Mid-Brunhes), populations may not have adapted as well to the environmental changes that coincided with the Matuyama-Brunhes Boundary faunal turnover. This study exemplifies how early hominins may have tolerated low and medium level environmental changes but not larger ones. The continued presence of hominins in the Levant during the early Pleistocene was a process of several dispersal events, rather than a long continuous occupation.

- 11. Brychkov, D., Garb, Y., & Pearlmutter, D. (2018). The influence of climatocultural background on outdoor thermal perception. *International journal of biometeorology*, 62(10), 1873-1886.**

Category: Behavioral Science. [Link](#)

This study examines the extent to which people with different past thermal experience and "climatocultural" history systematically report different outdoor thermal sensations and thermal comfort patterns. After constructing two distinct climatocultural groups co-inhabiting the research setting (native Israelis vs. representatives of colder regions), and comparing their relative thermal preferences in both short-term and long-term observational experiments, we confirmed the existence of a strong correlation between affiliation to a certain climatocultural group and outdoor thermal sensation. It was shown that the degree of this correlation was not a constant value, and the strength of the difference in thermal sensation between different groups might change subject to different environmental conditions and possibly expectations. Under some environmental conditions, i.e., stressful but not extreme, the differences may be accentuated, while under others, i.e., either comfortable or extremely stressful, the scope of difference may diminish. Short-term acclimation may to some extent offset the differences

between separate climatocultural groups. The study also showed that the meaning of the thermal comfort scale itself may be perceived unevenly between representatives of different groups.

12. Damari, Y., & Kissinger, M. (2018). Quantity-based analysis of household food consumption patterns and drivers: The case of Israel. *Appetite*, 127, 373-385.

Category: Behavioral science. [Link](#)

The interest in better understanding the characteristics and drivers of food consumption by individuals and social groups has grown in recent years, because of various social, environmental, health and economic issues. Most analyses have focused either on the macro or national scale, using food balance/disappearance data, or on the micro scale, focusing on nutrition analysis in limited groups of individual consumers. While various household characteristics are expected to influence food-purchasing habits, the scope and methodology of most previous studies limited their ability to relate to multiple factors, and integrate all into specific consumption patterns. A third, mezzo approach focuses on analyzing household food purchasing, mostly using expenditure surveys. However, focusing on the value spent may result in different quantities of food purchased. This paper aims capturing the amount of food purchased by Israeli households and to analyze the socio-economic factors shaping that consumption. It joins limited number of studies worldwide that focused on the quantity purchased, and the first such analysis of household food purchasing in the State of Israel. It quantified food purchased by more than 30,000 households, and analyzed key shaping factors e.g., income, household size and age. It first, established the need for quantity based analysis. Then, an extensive breakdown of consumed food is presented and the unique diets of different parts of the society were identified. Finally, it examined the consumption of different lifestyles to find that couples lifestyles tend to consume more per capita, and that income has a crucial role in determining the rate of consumption both in terms of quantity and variety purchased. However it highlights that other variables should also be examined in order to assess properly why households consume the way they do. Nevertheless, the findings of this research can be used as the basis for examining the health, social, or environmental implications of the different identified food consumption habits, support long-term research that examines changes over time, and may be the basis for examining the potential benefits of implementing specific policies.

13. Davidovitch, A., Palatnik, R. R., Ayalon, O., & Shechter, M. (2014). Economic Aspects of Israeli Adaptation Policy to Climate Change. *Available at SSRN 2504610*.

Category: Public Policy. [Link](#)

Adaptation policy is becoming a key issue of the post-Kyoto 2012 international climate policy agreement. The difficulties in implementing national and international mitigation policies and the increasing awareness of climate change phenomena eventually gave impetus to science and policy research on adaptation. Therefore, the Ministry of Environmental Protection established the Israeli Climate Change Information Center (ICCIC). The mission of the information center is to assemble the scientific research regarding adaptation to climate change, identify research gaps and define the risks and consequences of climate change in various sectors. Furthermore, the ICCIC will integrate Israel's knowledge and technologies for implementation within Israel and other countries. This research is part of developing a national scientific knowledge base that will support the evolvement of the national adaptation plan, focusing on economic aspects. The research includes gathering and integration of available research and policy documents concerning adaptation to climate changes, in order to identify knowledge gaps from economic aspects, to recognize all the risks and implications of climate change and to propose a national policy of adaptation. The research is based on survey of various measures to cope with climate change in order to determine the economic resources that should be invested, even if the effects of climate change turn out to be less severe. These options are defined as "No Regret alternatives". The specific areas that were investigated are as follows. First, the climate changes

that are predicted for the next 50 years are presented. Second, specific policies for water resources, public health, bio-diversity and green building are discussed. Finally, the mutual connections amongst the above-mentioned areas are analyzed in a multi-disciplinary concept using economic perspectives.

- 14. Depietri, Y., & Orenstein, D. E. (2020). Managing fire risk at the wildland-urban interface requires reconciliation of tradeoffs between regulating and cultural ecosystem services. *Ecosystem Services*, 44, 101-108.**

Category: Geography (Urban Planning). [Link](#)

Forest fires at the wildland-urban interface are generating increasing losses due to the expansion of cities into adjacent forests. At the same time, urban green open spaces are highly valuable as sources of recreational, educational and aesthetic benefits. Tradeoffs may arise between the desire to preserve peri-urban forests for cultural ecosystem services and the need to manage them to enhance the regulatory capacity of the ecosystem and reduce fire risk. In this paper, we assess cultural services and fire regulating services in the urban forest of the city of Haifa (Israel) using participatory GIS mapping, and we look at tradeoffs between these services. We interviewed intensive users of the green spaces of the city and fire experts regarding the location of these services and preferences about selected vegetation management strategies to reduce fire risk. Green space users promoted the idea of a pristine environment and its conservation, mainly for recreational purposes, while fire experts suggested that vegetation management is needed although this would bring about changes in the landscape. Tradeoffs between cultural and regulating services can thus generate conflicts. We conclude by suggesting ways seemingly opposing objectives can be reconciled to reduce fire risk at wildland-urban interface and in a lasting way.

- 15. Drieschova, A., Fischhendler, I., & Giordano, M. (2011). The role of uncertainties in the design of international water treaties: an historical perspective. *Climatic Change*, 105(3-4), 387-408.**

Category: International Relations. [Link](#)

Water is one natural resource whose management is especially susceptible to uncertainties, many of which are being exasperated by climate change. Some of these uncertainties originate from knowledge deficits in physical conditions while others relate to behavioral and social variability related to water supply and use. However, to our knowledge no quantitative analysis of how uncertainties have been translated into transboundary water treaty structures exists. The present paper partially fills this gap through an examination of how uncertainty has been reflected in basin specific transboundary treaties and how that reflection has changed over the last century. While we could identify only minor trends in the frequency with which uncertainties are mentioned in treaties, we did find two clear patterns in the strategies adopted to deal with them. First, treaties seem to adopt a portfolio approach that spreads the dangers of uncertainty by concurrently including several management strategies simultaneously. Second, there is a trend towards more open-ended strategies in recent decades, rather than hard codification of rules as had earlier been more common.

- 16. Drieschova, A., Giordano, M., & Fischhendler, I. (2009). Climate change, international cooperation and adaptation in transboundary water management. *Adapting to climate change: Threshold, values, governance*, 384-98.**

Category: International Relations. [Link](#)

No abstract.

17. Ellenblum, R. (2012). *The collapse of the eastern Mediterranean: climate change and the decline of the East, 950-1072*. Cambridge University Press.

Category: Geography (History). [Link](#). No abstract (book).

18. Ellenblum, R. (2018). How Did Climate Change Cause the Collapse of Civilizations in the Historical Past?. *Decolonial Heritage: Natures, Cultures, and the Asymmetries of Memory*, 55.

Category: Geography (History). [Link](#). No abstract (book).

19. Feitelson, E., & Tubi, A. (2017). A main driver or an intermediate variable? Climate change, water and security in the Middle East. *Global environmental change*, 44, 39-48.

Category: Geography. [Link](#)

The nexus between climate change and violent conflict is at the center of intensifying political and academic debate. Yet research on the extent and strength of this relationship remains inconclusive and much of the literature is largely empirical, lacking a sufficient theoretical underpinning. This study advances a conceptual framework linking climate change induced droughts and conflict, in potentially iterative relations. The framework is applied to two case studies displaying different responses to an extreme drought tentatively linked with climate change. To this end, we analyze the effect of the 2007-10 drought that afflicted the Middle East on the Euphrates and the lower Jordan River basins. While in the Euphrates basin the 2007-10 drought was followed by the outbreak of large-scale violent conflict in Syria which spilled over to Iraq, conflicts did not occur in the more water stressed Jordan River basin despite the tensions between the riparian countries. Using multiple sources the main factors that affected the responses to the drought in the two basins are identified and analyzed comparatively. The results show that the behavior of upper riparian countries and states' institutional and economic structures constitute critical factors affecting the likelihood of conflict. Most importantly, conflicts evolved only when fundamental factors, particularly adaptive capacity, have been compromised. Thus, from a theoretical perspective, we find that climate change is an intermediate variable, and should be analyzed as such, rather than as a major driver of conflict.

20. Feitelson, E., Tamimi, A., & Rosenthal, G. (2012). Climate change and security in the Israeli–Palestinian context. *Journal of Peace Research*, 49(1), 241-257.

Category: International Relations. [Link](#)

The Middle East is among the least stable and most fragile regions. It is not surprising, therefore, that concerns have been raised regarding the potential implications of climate change. This article critically examines the potential interactions between climate change and conflict in the Israeli–Palestinian case. Based on a review of the possible effects of climate change, water is identified as the main issue which may be affected, and it also has transboundary implications. We illustrate the potential implications of reduced freshwater availability by assessing the ability to supply normative domestic water needs under rapid population growth scenarios, including return of refugees. In addition, the ability to supply environmental needs and the needs of peripheral farmers under extremely reduced availability scenarios is examined. The normative domestic demand in Israel and the West Bank can be supplied on the basis of natural resources, though re-allocation of water from Israel to the Palestinians is necessary. The Gaza Strip cannot supply the normative domestic needs under any scenario and hence requires immediate augmentation, regardless of climate change. Desalination can supply Gaza's needs and augment water resources in Israel and the West Bank, thereby partially decoupling domestic and agricultural use from climate. Thus, it is unlikely that climate change will directly affect the conflict. However, framing water as a security issue, along with the potential for furthering such securitization with reference to climate change, may adversely affect the readiness of the parties to take adaptive measures and lead them to rigidify their negotiating positions. Possible effects

of climate change on other regional players, particularly Egypt and Jordan, may have indirect effects on the Israeli–Palestinian scene. But this hypothesis requires further study.

- 21. Fleischer, A., & Sternberg, M. (2006). The economic impact of global climate change on Mediterranean rangeland ecosystems: a space-for-time approach. *Ecological Economics*, 59(3), 287-295.**

Category: Economics. [Link](#)

Global Climate Change (GCC) can bring about changes in ecosystems and consequently in their services value. Here we show that the urban population in Israel values the green landscape of rangelands in the mesic Mediterranean climate region and is willing to pay for preserving it in light of the expected increasing aridity conditions in this region. Their valuation of the landscape is higher than that of the grazing services these rangelands provide for livestock growers. These results stem from a Time-for-Space approach with which we were able to measure changes in biomass production and rainfall at four experimental sites along an aridity gradient.

- 22. Fleischer, A., Lichtman, I., & Mendelsohn, R. (2007). *Climate change, irrigation, and Israeli agriculture: Will warming be harmful?*. The World Bank.**

Category: Public Policy (Agriculture). [Link](#)

This paper utilizes a Ricardian model to test the relationship between annual net revenues and climate across Israeli farms. The study finds that it is important to include the amount of irrigation water available to each farm in order to measure the response of farms to climate. With irrigation water omitted, the model predicts climate change is strictly beneficial. However, with water included, the model predicts that only modest climate changes are beneficial while drastic climate change in the long run will be harmful. Using the AOGCM Scenarios we show that farm net revenue is expected to increase by 16% in 2020 while in 2100 farm net revenue is expected to drop by 60% to 390% varying between the different scenarios. Although Israel has a relative warm climate, a mild increase in temperature is beneficial due to the ability to supply international markets with farm products early in the season. Our findings lead to the conclusion that securing water rights to the farmers and international trade agreements can be important policy measures helping farmers adapt to climate change.

- 23. Fleischer, A., Mendelsohn, R., & Dinar, A. (2011). Bundling agricultural technologies to adapt to climate change. *Technological Forecasting and Social Change*, 78(6), 982-990.**

Category: Economics (Agriculture). [Link](#)

Farmers can respond to climate change by modifying their technologies or management practices, or both. In this paper, we examine the choice of crop, irrigation, and cover as a bundled decision by a farmer. Using discrete choice analysis and a cross section of farms from Israel, we test whether these decisions are sensitive to climate and find that they are. In the case of Israel, the farmers completely substitute capital for climate. Simulating increase in temperature suggests that warming would lead Israeli farmers to shift mainly to orchards under cover and irrigation. But it is likely that bundling adaptations will provide flexibility and sustainability for future farmers in many locations under climate change conditions.

- 24. Geddes, A. (2015). Governing migration from a distance: Interactions between climate, migration, and security in the South Mediterranean. *European security*, 24(3), 473-490.**

Category: International Relations. [Link](#)

Links between security and migration are well established and are associated with the meaning, status, and practice of borders in the international political system. This article assesses how and with what effects the effects of environmental and climate change have entered this relationship

between migration and security. It does so by assessing the EU's external governance of migration in "South Mediterranean Partner Countries" (SMPCs): Algeria, Egypt, Iraq, Israel, Jordan, Libya, Morocco, Palestine, Syria, and Tunisia. It is argued that a focus on promoting "adaptation" and building "resilience" has developed that is consistent with the logic of governing migration from a distance. However, the article challenges ideas that environmental/climate change act as simple migration "triggers" and instead explores implications of movement towards and not away from risk, as well as the potential for populations to be trapped in areas that expose them to risk. It is shown that both have important implications for the relationship between migration, environmental/climate change, and security in SMPCs.

- 25. Green, M. S., Pri-or, N. G., Capeluto, G., Epstein, Y., & Paz, S. (2013). Climate change and health in Israel: adaptation policies for extreme weather events. *Israel journal of health policy research*, 2(1), 23.**

Category: Public Policy (Health). [Link](#)

Climatic changes have increased the world-wide frequency of extreme weather events such as heat waves, cold spells, floods, storms and droughts. These extreme events potentially affect the health status of millions of people, increasing disease and death. Since mitigation of climate change is a long and complex process, emphasis has recently been placed on the measures required for adaptation. Although the principles underlying these measures are universal, preparedness plans and policies need to be tailored to local conditions. In this paper, we conducted a review of the literature on the possible health consequences of extreme weather events in Israel, where the conditions are characteristic of the Mediterranean region. Strong evidence indicates that the frequency and duration of several types of extreme weather events are increasing in the Mediterranean Basin, including Israel. We examined the public health policy implications for adaptation to climate change in the region, and proposed public health adaptation policy options. Preparedness for the public health impact of increased extreme weather events is still relatively limited and clear public health policies are urgently needed. These include improved early warning and monitoring systems, preparedness of the health system, educational programs and the living environment. Regional collaboration should be a priority.

- 26. Hamed, T. A., & Bressler, L. (2019). Energy security in Israel and Jordan: The role of renewable energy sources. *Renewable Energy*, 135, 378-389.**

Category: Geography. [Link](#)

The usage of renewable energy sources increases the energy security because it brings extensive socioeconomic benefits to Israeli and Jordanian populations, added pathways for bilateral cooperation and allows countries to achieve their climate mitigation goals. Israel and Jordan's energy mix are both dominated by fossil fuel usage and produce only 4% of their energy supply from renewable energy. Each have been affected by the events of the Arab Spring and the discovery of the Tamar and Leviathan natural gas fields. Both countries are vulnerable to political instability and climate change. Although Israel and Jordan have set targets to attain 10% renewable energy by 2020 the progress is slow and both countries may not reach this goal if the implementation occurs at the current pace. Current policies include feed-in tariffs and auctions for renewable projects. Both would benefit from increased investment electric in vehicles, better connectivity to the grid and greater cross-border cooperation.

- 27. Hamza, E., & Paz, S. (2016). The Traditional Arab House in the Eastern Mediterranean and its Adaptation to the Mediterranean Climate. *Geographical Research*, 54(1), 72-85.**

Category: Geography. [Link](#)

This study examines the climate-related methods of adaptation on which the traditional Arab house in the Eastern Mediterranean was based. We analysed nine old houses (from the 18th century to the early 20th century), built in the Arab vernacular tradition style, in three areas of Israel with different climatic conditions. Three houses in each area were chosen at random. Only nine were chosen because of the difficulty in finding houses whose state of preservation was in keeping with the aims of the research. For each house, climate-related elements of the construction were documented. We found elements included at the design stage indicating climate consciousness, climate-related elements due to building constraints, and building constraints in a cultural context with implications for the balance of climatic efficiency. The findings showed that climatic considerations were an integral part of the design while the principles crossed the boundaries of the three areas. Temperature, relative humidity, and heat intensity were measured, both inside and outside the house on selected days in each season. The research showed that the house moderates the impact of the outside temperature, inside the house in winter and mainly during the hot hours of the day in summer. Most of the climate-related elements are still relevant. They can be used in regions with Mediterranean-type climates (in the Mediterranean Basin, South Africa, central Chile, and southwestern Australia), especially when global warming and air pollution demand a substantial revolution of building design philosophies, strategies, technologies, and management methods.

- 28. Hartman, G., Bar-Yosef, O., Brittingham, A., Grosman, L., & Munro, N. D. (2016). Hunted gazelles evidence cooling, but not drying, during the Younger Dryas in the southern Levant. *Proceedings of the National Academy of Sciences*, 113(15), 3997-4002.**

Category: Archeology. [Link](#)

The climatic downturn known globally as the Younger Dryas (YD; similar to 12,900-11,500 BP) has frequently been cited as a prime mover of agricultural origins and has thus inspired enthusiastic debate over its local impact. This study presents seasonal climatic data from the southern Levant obtained from the sequential sampling of gazelle tooth carbonates from the Early and Late Natufian archaeological sites of Hayonim and Hilazon Tachtit Caves (western Galilee, Israel). Our results challenge the entrenched model that assumes that warm temperatures and high precipitation are synonymous with climatic amelioration and cold and wet conditions are combined in climatic downturns. Enamel carbon isotope values from teeth of human-hunted gazelle dating before and during the YD provide a proxy measure for water availability during plant growth. They reveal that although the YD was cooler, it was not drier than the preceding Bolling-Allerod. In addition, the magnitude of the seasonal curve constructed from oxygen isotopes is significantly dampened during the YD, indicating that cooling was most pronounced in the growing season. Cool temperatures likely affected the productivity of staple wild cereal resources. We hypothesize that human groups responded by shifting settlement strategies-increasing population mobility and perhaps moving to the warmer Jordan Valley where wild cereals were more productive and stable.

- 29. Hatuka, T., & Saaroni, H. (2014). The need for advocating regional human comfort design codes for public spaces: a case study of a Mediterranean urban park. *Landscape Research*, 39(3), 287-304.**

Category: Geography. [Link](#)

Though widely acknowledged, climate change and global warming considerations are poorly integrated in landscape planning practices. Exploring this matter, the paper analyses the design

of a contemporary urban park in Jaffa, Israel, investigating why climate considerations are so poorly addressed. The analysis focuses on the various competing parameters such as social use, design, political considerations and community desires that influence the planning process as well as the park experience. Results confirm a paradox. Though climate conditions are highly acknowledged, and aggravation in heat stress and discomfort conditions are well known in this region, planners and users alike prefer to suspend them in favour of image and aesthetics. Responding to these results, the paper discusses possible venues for further integrating climate considerations into landscape planning.

- 30. Ide, T., & Tubi, A. (2020). Education and environmental peacebuilding: insights from three projects in Israel and Palestine. *Annals of the American Association of Geographers*, 110(1), 1-17.**

Category: Geography. [Link](#)

Environmental peacebuilding has attracted great scholarly and political interest in recent years, but little knowledge is available on the interface of education and environmental peacebuilding. This void is unfortunate given the importance of education for peacebuilding and the wider "educational turn" in human geography. This study represents the first systematic analysis of the role of education activities in the context of environmental peacebuilding. We establish a theoretical framework and analyze the education activities of three environmental peacebuilding projects in Israel and Palestine based on forty-five interviews conducted between 2010 and 2018. The findings reveal that the projects mostly aim to create trust and understanding but that activities related to an improvement of the environmental situation and to the cultivation of interdependence take place as well. Despite a number of significant problems-primarily the tense political situation and local resistance-the education activities successfully catalyze processes of building everyday or local peace, at least among the participants. An impact of such projects on formal conflict resolution is possible but remains uncertain. The findings also show that environmental cooperation can spill over and that contested processes of depoliticization and neoliberalization can, at least to a certain degree, be utilized to positively affect environmental cooperation, education, and peacebuilding.

- 31. Ide, T., Link, P. M., Scheffran, J., & Schilling, J. (2016). The climate-conflict Nexus: pathways, regional links, and case studies. In *Handbook on sustainability transition and sustainable peace* (pp. 285-304). Springer, Cham.**

Category: International Relations. [Link](#)

The role of climate change as a potential cause of violent conflict has been debated in the scholarly and policy communities for several years. We review the most recent quantitative and qualitative literature and find that research on the issue has produced little consensual findings so far. Further, we discuss major theoretical, conceptual and empirical issues and describe possible pathways linking climate change to violent conflict. To illustrate these issues, we analyse the climate-conflict nexus in different world regions and present three qualitative case studies in north-western Kenya, the Nile Basin, and Israel/Palestine. We find that possible reasons for the lack of scientific consensus may be the difficulties of existing approaches to adequately capture the complex links between climate change, vulnerability, and violent conflict.

- 32. Issar, A. S. & Zohar. M. (2007). *Climate Change: Environment and History of the Near East*. Springer-Verlag, Berlin Heidelberg.**

Category: Geography. No link. No abstract (book).

- 33. Jaffe, Y., Bar-Oz, G., & Ellenblum, R. (2019). Improving integration in societal consequences to climate change. *Proceedings of the National Academy of Sciences of the United States of America*, 116(11), 4755.**

Category: History. [Link](#). No abstract.

- 34. Jarrar, S. (2015). No Justice, No Adaptation: The politics of climate change adaptation in Palestine. *La balsa de piedra: revista de teoría y geoestrategia iberoamericana y mediterránea*, (10), 1-26.**

Category: International Relations. [Link](#)

This article presents an analysis of the efficiency of Climate Change adaptation planning for the climatically vulnerable sectors in the Occupied Palestinian Territory. Specifically, the article argues that Climate Change adaptation in Palestine is not merely a technical challenge; rather, it is a socio-political mission that is highly linked to region-specific social and geopolitical vulnerabilities. In this article, we argue that successful Climate Change adaptation planning in Palestine must critically address Israel's hydrological and geopolitical domination in the region. Informed by discourse and political analyses, this article argues that in regions scarred by illegal military occupations, as in Palestine, existing political and economic vulnerabilities eliminate the prospect of effective adaptation planning and implementation, and are likely to magnify the social, economic and environmental impacts of Climate Change. Challenges associated with the Israeli occupation, donor dependency, access to Climate Change adaptation funds, and internal institutional weaknesses are found to be fueled by existing political inequalities and are identified and analyzed in relation to unsuccessful Climate Change adaptation outcomes.

- 35. Kaminski, J., Kan, I., & Fleischer, A. (2013). A structural land-use analysis of agricultural adaptation to climate change: a proactive approach. *American Journal of Agricultural Economics*, 95(1), 70-93.**

Category: Economics (Agriculture). [Link](#)

This article proposes a proactive approach for analyzing agricultural adaptation to climate change wherein agricultural production technologies are regarded as potential targets of research and development (R&D) efforts. We develop a structural land-use model wherein farmers maximize profit by allocating their land among crop-technology bundles. Proactive R&D directions are derived by identifying the technological attributes through which climate change reduces overall agricultural profitability, despite farmers reallocating their land into bundles. We find that in Israel, long-term losses stem from increases in crops' input requirements and changes in the inter- and intra-annual distribution of precipitations. Therefore, we identify these vulnerable points as the main potential targets of further R&D efforts.

- 36. Kaniewski, D., Marriner, N., Ilan, D., Morhange, C., Thareani, Y., & Van Campo, E. (2017). Climate change and water management in the biblical city of Dan. *Science advances*, 3(11), e1700954.**

Category: Archeology. [Link](#)

Global climate change has sharpened focus on the social and economic challenges associated with water deficits, particularly in regions where anthropogenic demands exceed supply. This modern condition was also experienced by the people of ancient western Asia, where chronic water shortages were accentuated by recurrent droughts. However, human societies may react to climate change, particularly desiccation, in different ways depending on specific local conditions. Focusing on the biblical site of Tel Dan (present-day Israel), we show the effects of severe precipitation decline in an environment that was well watered and fertile even in times of drought. Such local niches of prosperity became attractive targets for predation when food resources became scarce in surrounding rain-fed areas. We propose that predation forced urban populations to either flee or adopt new subsistence strategies. Predation and abandonment, even

if only partial, led to the poor maintenance of water networks in and around the city. Once stagnant water surrounded the area, water-borne disease proliferated. Our study shows how climate changes can disrupt social and political structures, cause water system management to collapse, and facilitate marshland expansion.

- 37. Laslo, E., & Baram-Tsabari, A. (2019). Expressions of ethics in reader comments to animal experimentation and climate change online coverage. *International Journal of Science Education, Part B, 9(4), 269-284.***

Category: Education (Science). [Link](#)

Although science presents ethical challenges to society, little is known about the ways in which adults express ethical concerns in everyday science-related situations. This study analyzed the ethical expressions in 1079 reader comments to online news coverage of animal experimentation and climate change in Israel. Some forms of ethical concerns were expressed in many reader comments following animal experimentation (70%) and climate change (47%) coverage. Opposition to animal experimentation was primarily expressed emotionally, whereas comments supporting these experiments and complex stances towards them were mainly couched in ethical reasoning. Ethical expressions related to climate change primarily drew on ethical concepts. The importance of trust in scientific practice and institutions was evident in both issues. Formal ethics, as expressed by using ethical concepts or ethical reasoning, were found to be present in public discourse, suggesting it can serve as a foundation to enhance public engagement with bioethics.

- 38. Lautze, J., & Kirshen, P. (2009). Water allocation, climate change, and sustainable water use in Israel/Palestine: the Palestinian position. *Water International, 34(2), 189-203.***

Category: International Relations. [Link](#)

This study examines impacts of population growth and climate change on water supplies of Israelis and Palestinians under business-as-usual conditions and application of the Palestinian Water Authority position on water resources division. Eight scenarios are developed that describe conditions in 2000 and 2025. Several indicators are used to measure the effects of these conditions. The indicators show that population growth and climate change will create international inequities and environmental inadequacies under business-as-usual conditions. Although conditions are more equitable and sustainable with application of the Palestinian position, serious environmental problems will persist – likely exacerbated by the potential impacts of climate change.

- 39. Lavee, D., Feitelson E., Joseph-Ezra H. (2019) Israel. In: Molle F., Sanchis-Ibor C., Avellà-Reus L. (eds) *Irrigation in the Mediterranean: Global Issues in Water Policy*, 22. Springer, Cham.**

Category: Public Policy (Agriculture). [Link](#)

Israel has succeeded in advancing irrigated agriculture on a wide scale on arid and semiarid lands, with an intensive use of technology and capital, and a firm state-led irrigation policy. This chapter describes the evolution of the Israeli irrigation sector since the British Mandate period, distinguishing four distinct eras linked to contrasting political and technological frameworks. It also explores the changes in the institutional framework of the irrigation sector (from the local community level to the state structure). The chapter underscores the critical role of technology in Israeli irrigation, most particularly in the development of micro-irrigation and monitoring systems, and the shift towards desalination and wastewater use for irrigation. Finally, it identifies the major challenges to be overcome, considering water quantity and quality problems, and the impact of climate change, possibly compounded by tensions with neighboring countries.

- 40. Leroy, S. A. (2010). Pollen analysis of core DS7-1SC (Dead Sea) showing intertwined effects of climatic change and human activities in the Late Holocene. *Journal of Archaeological Science*, 37(2), 306-316.**

Category: Archeology. [Link](#)

The Dead Sea sediment holds the archives of a complex relationship between ever-changing nature and ancient civilisations. Here the detailed pollen analyses of core DS7-1SC (off-Ein-Gedi) are presented for the first time. The record covers the last 2500 years. The facies changes from halite (when no freshwater flows in the Dead Sea) to laminites (when rainfall provides sufficient inflow for the Jordan and subsidiary rivers) a couple of times through the record. The pollen diagram (supported by the facies change) shows a wetter Roman-Byzantine period, which allowed intensive arboriculture and a wetter period at the end of the XIXth and beginning of the XXth centuries, the latter in good relation with historical and instrumental data. Based on radiocarbon chronologies on several pollen diagrams along the western Dead Sea shore, the transition to drier climates and the transition to pastoralism are suggested to take place between a few decades before the Islamic period and close to this transition.

- 41. Linares, C., Díaz, J., Negev, M., Martínez, G. S., Debono, R., & Paz, S. (2020). Impacts of climate change on the public health of the Mediterranean Basin population-Current situation, projections, preparedness and adaptation. *Environmental Research*, 182, 109107.**

Category: Public Policy (Health). [Link](#)

The Mediterranean Basin is undergoing a warming trend with longer and warmer summers, an increase in the frequency and the severity of heat waves, changes in precipitation patterns and a reduction in rainfall amounts. In this unique populated region, which is characterized by significant gaps in the socio-economic levels particularly between the North (Europe) and South (Africa), parallel with population growth and migration, increased water demand and forest fires risk - the vulnerability of the Mediterranean population to human health risks increases significantly. Indeed, climatic changes impact the health of the Mediterranean population directly through extreme heat, drought or storms, or indirectly by changes in water availability, food provision and quality, air pollution and other stressors. The main health effects are related to extreme weather events (including extreme temperatures and floods), changes in the distribution of climate-sensitive diseases and changes in environmental and social conditions. The poorer countries, particularly in North Africa and the Levant, are at highest risk. Climate change affects the vulnerable sectors of the region, including an increasingly older population, with a larger percentage of those with chronic diseases, as well as poor people, which are therefore more susceptible to the effects of extreme temperatures. For those populations, a better surveillance and control systems are especially needed. In view of the climatic projections and the vulnerability of Mediterranean countries, climate change mitigation and adaptation become ever more imperative. It is important that prevention Health Action Plans will be implemented, particularly in those countries that currently have no prevention plans. Most adaptation measures are “win-win situation” from a health perspective, including reducing air pollution or providing shading solutions. Additionally, Mediterranean countries need to enhance cross-border collaboration, as adaptation to many of the health risks requires collaboration across borders and also across the different parts of the basin.

- 42. Lucke, B., Shunnaq, M., Walker, B., Shiyab, A., al-Muheisen, Z., al-Sababha, H., ... & Schmidt, M. (2012). Questioning Transjordan's historic desertification: a critical review of the paradigm of 'Empty Lands'. *Levant*, 44(1), 101-126.**

Category: Archeology. [Link](#)

European travel reports of the 19th century and excavations in Transjordan created the impression that population numbers were strongly reduced during the Islamic periods, leading

to 'empty' lands which were only resettled during the early 20th century. This development was considered to be caused by bad (Muslim) governance, nomadic incursions, and environmental degradation. However, our case study near the ancient site Abila of the Decapolis in northern Jordan found that the land was never empty and always fertile, but there is evidence for a rapid and intense landscape change during the Late Byzantine period. This was probably caused by a significant shift to aridity which also triggered socio-economic changes in subsistence strategies from agriculture to nomadism. The climatic change seems to have occurred rapidly within approximately 100 years in the late 6th and early 7th centuries AD and was accompanied by heavy rainfall events. It might have been caused or triggered by the climatic event of the 'Mystery Veil' which the Byzantine historian Procopius described in the year 536 AD. During the Medieval period, settlement density increased again until another decline took place in the late Ottoman period. However, the vicinity of Abila was probably never abandoned and the continuity of place names speaks against a larger exchange of population. Rising population numbers and favourable climatic conditions in the early 20th century caused most tribes to settle again, which improved government control.

- 43. Maor, M., Tosun, J. & Jordan, A. (2017): Proportionate and disproportionate policy responses to climate change: core concepts and empirical applications, *Journal of Environmental Policy & Planning*, DOI: 10.1080/1523908X.2017.1281730**

Category: Public Policy. [Link](#)

A fresh perspective on policy-making and planning has emerged which views disproportionate policy as an intentional policy response. A disproportionate policy response is understood to be a lack of 'fit' or balance between the costs of a public policy and the benefits that are derived from this policy, and between policy ends and means. This paper applies this new perspective on the proportionality of policy-making to the area of climate change. The first part of the paper discusses the underlying causes of disproportionate policy responses in broad terms and then applies the theoretical reasoning to understand the conditions in which they are likely to appear in relation to climate change. These conditions are hypothesized to relate to four main factors: economic considerations; levels of public demand; focusing events; and strategic considerations. It concludes with the suggestion that societal actors may be able to manipulate these four factors to encourage politicians to adopt policies that mitigate climate change more rapidly than is currently the case in most countries.

- 44. Mason, M. (2013). Climate change, securitisation and the Israeli–Palestinian conflict. *The Geographical Journal*, 179(4), 298-308.**

Category: Geography. [Link](#)

Securitisation theory serves as a useful corrective to the climate determinism' evident in mainstream debates on the security effects of climate change, but there are divergences within this approach over what constitutes successful' securitisation. For the Copenhagen School, climate change has not been securitised because relevant state actors do not yet accept that emergency measures are necessary to tackle dangerous' climate risks. In contrast, sociological' proponents of securitisation theory identify successful' securitisation evident from climate policies that would not otherwise have been undertaken without the political mobilisation of crisis narratives concerning threats to human and ecosystem health. These marked differences over climate change reflect, I argue, divergent spatialities deployed within securitisation theory. The Copenhagen School posits state-bounded territoriality as the power container dominating global security dynamics, viewing climate change as a weaker, deterritorial source of securitisation. Sociological approaches admit a wider set of security effects arising from the political mobilisation of climate threats because securitisation is claimed to emerge from diverse performative spaces. A critical application of securitisation theory to the Israeli-Palestinian conflict reveals insights from both strands on the outcomes of attempts to portray climate change as a regional security threat. However, I contend that the spatial analytics of securitisation theory

miss vertical forms of power that, in the case of Israeli occupational practices, feature use of a climate threat scenario to reinforce processes of military-political domination.

- 45. Michaels, L., & Tal, A. (2015). Convergence and conflict with the ‘National Interest’: Why Israel abandoned its climate policy. *Energy Policy*, 87, 480-485.**

Category: Public Policy. [Link](#)

This article describes how Israel abandoned its climate policy through the prism of the country's evolving energy profile, most importantly the 2009 discovery of huge natural gas reserves in Israel's Mediterranean exclusive zone. The article outlines five phases of Israeli political engagement with climate change from 1992 until 2013 when the National GHG Emissions Reduction Plan was defunded. Israel was motivated to develop its climate policy by international norms: OECD membership and the 2009 UN Summit in Copenhagen. Although the eventual Plan may not have significantly reduced Israel's emissions, it contained immediate cost-effective, energy efficiency measures. Despite rhetorical support for renewable energy, in practice, most Israeli leaders consistently perceive ensuring supply of fossil fuels as the best means to achieve energy security. The gas finds thus effectively ended a potentially significant switch towards renewable energy production. The development of commercially competitive Israeli renewable energy technology may change this prevailing economic calculus alongside renewed international and domestic leadership and a resolution of the region's conflicts. Although Israel's political circumstances are idiosyncratic, the dynamics shaping its climate policy reflect wider trends such as competing economic priorities and failure to consider long term energy security.

- 46. Michaels, L., & P. Alpert. 2012. Anthropogenic Climate Change in Israel. In D. Orenstein, A. Tal and C. Miller (eds.), *Between Ruin and Restoration: an Environmental History of Israel*, 309-333, University of Pittsburgh Press.**

Category: Environmental Studies. [Link](#). No abstract (book chapter).

- 47. Morel, A., & Morel, B. (2006). From global warming to water scarcity: What are the most urgent environmental problems of the region. In *Environmental security and environmental management: The role of risk assessment* (pp. 103-107). Springer, Dordrecht.**

Category: International Relations. [Link](#)

The Environmental Security discussion group focused on the issue of water scarcity in the Mediterranean region, namely Israel, Palestine, Jordan, and Egypt, for a medium time-scale (10-20 years in the future). No consensus was reached as to whether climate change would have a significant impact, and what kind of impact. On the other hand, the inevitable increase of population pressure in the region is a source of considerable concern and should be enough impetus to begin adaptation strategies as soon as possible. The group's discussion addressed potential hazards and solutions for a medium time scale. There was consensus that, considering the security situation between Israel and its neighbors, the environmental problems of the region, which are serious and getting more so with time, can be addressed adequately only with the active participation of the international community. Increasing water use efficiency would be the most cost-efficient short term solution. Longer term solution includes large scale endeavors such as the increase desalination capacity. The members of this discussion group were representing 5 countries [Spain, Israel, US, Turkey, Belarus] from the public, private, and academic sectors.

- 48. Murray, G., & Xing, H. (2020). Religion and Climate Change: Rain Rituals in Israel, China, and Haiti. *Religions*, 11(11), 554.**

Category: Anthropology. [Link](#)

Human populations confront three distinct climate challenges: (1) seasonal climate fluctuations, (2) sporadic climate crises, and (3) long term climate change. Religious systems often attribute climate crises to the behavior of invisible spirits. They devise rituals to influence the spirits, and do so under the guidance of religious specialists. They devise two types of problem-solving rituals: anticipatory climate maintenance rituals, to request adequate rainfall in the forthcoming planting season, and climate crisis rituals for drought or inundations. The paper compares rainfall rituals in three different settings: Israel (Judaism), Northwest China (ethnic village religion), and Haiti (Vodou). Each author has done anthropological fieldwork in one or more of these settings. In terms of the guiding conceptual paradigm, the analysis applies three sequentially organized analytic operations common in anthropology: (1) detailed description of individual ethnographic systems; (2) comparison and contrast of specific elements in different systems; and (3) attempts at explanation of causal forces shaping similarities and differences. Judaism has paradoxically maintained obligatory daily prayers for rain in Israel during centuries when most Jews lived as urban minorities in the diaspora, before the founding of Israel in 1948. The Tu of Northwest China maintain separate ethnic temples for rainfall rituals not available in the Buddhist temples that all attend. The slave ancestors of Haiti, who incorporated West African rituals into Vodou, nonetheless excluded African rainfall rituals. We attribute this exclusion to slavery itself; slaves have little interest in performing rituals for the fertility of the fields of their masters. At the end of the paper, we identify the causal factors that propelled each systems into a climate-management trajectory different from that of the others. We conclude by identifying a common causal factor that exerts a power over religion in general and that has specifically influenced the climate responses of all three religious systems.

- 49. Nachshon, U., Netzer, L., & Livshitz, Y. (2016). Land cover properties and rain water harvesting in urban environments. *Sustainable cities and society*, 27, 398-406.**

Category: Urban Geography. [Link](#)

Water harvesting is an ancient practice that has been used, mainly in dry environments, to increase efficiency of water collection and use by directing water from a large natural watershed or man-made collection surface into a small basin where the water can be stored in underground reservoirs or to be used directly for irrigation or domestic uses. In modern era water harvesting has been neglected, particularly at the developed countries, due to the technological achievements in the fields of water production and transport. Nevertheless, over recent years, water harvesting in modern-urban environments becomes a necessary practice. The urban regions are being paved and built, resulting in reduction of groundwater recharge area. Consequently, large amount of good quality water that rains over the cities is withdrawn from recharge as it is directed into the municipal drainage system. Moreover, in extreme rain events the drainage systems may be over-flooded which may lead to ecologic and economic hazards. This work reviews the history of rain water harvesting and discusses the impact of rain water harvesting in modern-urban environments on the hydrological system. Two types of rain water harvesting methods are being discussed and compared: storing of the harvested water in reservoirs and direct infiltration of the harvested water into the aquifer. Quantitative examples from Tel-Aviv, Israel are given and indicate that rain water harvesting may play an important role in the local and regional hydrological cycle and that direct infiltration of the harvested water into the aquifer is preferable for heavily populated cities.

- 50. Nair, K. P. (2019). Wild Cereal Cultivation in Israel—Global Warming: An Important Link. In *Combating Global Warming* (pp. 21-26). Springer, Cham.**

Category: Agriculture. [Link](#). No abstract (book).

51. Negev, M., Dahdal, Y., Khreis, H., Hochman, A., Shaheen, M., Jaghbir, M. T., ... & Davidovitch, N. (2020). Regional lessons from the COVID-19 outbreak in the Middle East: from infectious diseases to climate change adaptation. *Science of The Total Environment*, 144434.

Category: Public Health. [Link](#)

Global health threats including epidemics and climate change, know no political borders and require regional collaboration if they are to be dealt with effectively. This paper starts with a review of the COVID-19 outbreak in Israel, Palestine and Jordan, in the context of the regional health systems, demography and politics. We suggest that Israel and Palestine function as one epidemiological unit, due to extensive border crossing of inhabitants and tourists, resulting in cross-border infections and potential for outbreaks' transmission. Indeed, there is a correlation between the numbers of confirmed cases with a 2–3 weeks lag. In contrast, Jordan has the ability to seal its borders and better contain the spread of the virus. We then discuss comparative public health aspects in relation to the management of COVID-19 and long term adaptation to climate change. We suggest that lessons from the current crisis can inform regional adaptation to climate change. There is an urgent need for better health surveillance, data sharing across borders, and more resilient health systems that are prepared and equipped for emergencies. Another essential and currently missing prerequisite is close cooperation within and across countries amidst political conflict, in order to protect the public health of all inhabitants of the region.

52. Negev, M., Levine, H., Zohar, T., Nouman, H., Zohar, M., & Paz, S. (2020). Developing urban resilience in Haifa: preparedness to climate change in health and welfare agencies. *European Journal of Public Health*, 30(Supplement_5), ckaa166-094.

Category: Public Health. [Link](#)

Background: Extreme climate events (wildfires, floods, heatwaves, cold spells) are becoming more frequent in the Mediterranean, but adaptation levels in the health and welfare sectors remain low. The city of Haifa in northern Israel is prone to both war and extreme climate events. Focusing on Haifa, we aim to 1) examine local officials' risk perceptions of different extreme events, 2) compare preparedness to war vs. climate events, and 3) conduct a spatial analysis of climate and health vulnerabilities. Methods: Mixed-Methods: a qualitative component including 30 indepth interviews with local government health and welfare officials, and a qualitative component that includes mapping vulnerability indicators such as socio-economic status, recipients of welfare allowances, and temperature, focusing on urban heat islands. Results: The city of Haifa developed a comprehensive resilience policy for war and wildfire. However, there is no awareness or preparedness for other climate events that have not yet been experienced. Similarly, hospitals are prepared for emergencies, but not for extreme climate events. There are no national budget or guidelines for climate adaptation at the city level or in hospitals. Correspondingly, risk perceptions of climate change among health and welfare officials remain low. At the city level, social and climatic vulnerabilities are correlated, so that downtown neighborhoods are characterized by poorer socio-economic, health and welfare conditions, and higher summer temperatures. Conclusions: Haifa has good preparedness for events that had been experienced in the past. While emergency preparedness provides a good infrastructure for climate change preparedness, awareness and adaptation to the unique aspects of climate change preparations are needed, including reference to related spatial dimensions. Identifying the gaps between preparedness to various emergency events, can contribute to better climate change preparedness at the local level. Key messages: In the city of Haifa, emergency preparedness exists but is not extended to extreme climate events, and awareness to health risks of climate change remains low in the health and welfare agencies. Learning from emergency preparedness to wars, wildfires and earthquakes may contribute to enhancing preparedness to extreme climate events at the local level.

53. Negev, M., Paz, S., Clermont, A., Pri-Or, N. G., Shalom, U., Yeger, T., & Green, M. S. (2015). Impacts of climate change on vector borne diseases in the Mediterranean Basin—implications for preparedness and adaptation policy. *International journal of environmental research and public health*, 12(6), 6745-6770.

Category: Public Health. [Link](#)

The Mediterranean region is vulnerable to climatic changes. A warming trend exists in the basin with changes in rainfall patterns. It is expected that vector-borne diseases (VBD) in the region will be influenced by climate change since weather conditions influence their emergence. For some diseases (i.e., West Nile virus) the linkage between emergence and climate change was recently proved; for others (such as dengue) the risk for local transmission is real. Consequently, adaptation and preparation for changing patterns of VBD distribution is crucial in the Mediterranean basin. We analyzed six representative Mediterranean countries and found that they have started to prepare for this threat, but the preparation levels among them differ, and policy mechanisms are limited and basic. Furthermore, cross-border cooperation is not stable and depends on international frameworks. The Mediterranean countries should improve their adaptation plans, and develop more cross-sectoral, multidisciplinary and participatory approaches. In addition, based on experience from existing local networks in advancing national legislation and trans-border cooperation, we outline recommendations for a regional cooperation framework. We suggest that a stable and neutral framework is required, and that it should address the characteristics and needs of African, Asian and European countries around the Mediterranean in order to ensure participation. Such a regional framework is essential to reduce the risk of VBD transmission, since the vectors of infectious diseases know no political borders.

54. Nossek, H. (2019). Climate Change Communication in Israel. In *Oxford Research Encyclopedia of Climate Science*.

Category: Communication. [Link](#)

Given its location between the Mediterranean Sea and the desert, it seems Israel would be aware of the potential risks of climate change, especially given its lack of natural fossil resources, among other factors. Its location might have led to a greater emphasis on adaptation than mitigation and for climate change communication to flow from all relevant agents, utilized by the ingenuity of this hi-tech nation toward adaptation solutions. However, tracking the development of climate change policy and action leads to the conclusion that climate change is not at the top of Israel's agenda, due to factors ranging from defense to the neoliberal economy. This article presents some background history of climate change activism and policy development in Israel. It considers the relevant Israeli context that was the bedrock of climate change policy and activity. It also reviews the communicative activity of the relevant agents, including the government, parliament, scientists, nongovernmental organizations (NGOs), the media, and the public at large, and examines climate change on the public's agenda as it was presented by the media and reflected in public opinion polls, especially around global climate change events initiated by the United Nations (UN) from Bali (2007) to Paris (2015). Climate change communication in Israel is primarily practiced within the environmental communication field and less so in the science communication field. Communication about climate change is fairly benign compared to the war and terror that are part of everyday life in Israel. Only in the 1970s did environmental communication emerge in various media channels and was placed on the public's agenda, while climate change communication specifically began to gain salience slowly only in the first decade of the 21st century. Mass media coverage of climate change in Israel is generally quite low compared to other developed countries in the West, with new media channels partially used by interested nongovernmental organizations and individual activists. From time to time, media events organized by the Intergovernmental Panel on Climate Change and world summits on climate change that involve mainly local political interests serve to

increase coverage and raise public interest. As in other countries, coverage is usually local rather than global, even though climate change is a global problem. How effective is climate change communication in Israel? Research has only partially answered this question. It seems that the legacy of low media coverage contributes to the low salience of climate change on the governmental and public agendas. Moreover, the atmosphere of uncertain risks and outcomes for Israel has not created a climate of urgency for policymakers.

- 55. Ohana-Levi, N., Givati, A., Alfasi, N., Peeters, A., & Karnieli, A. (2018). Predicting the effects of urbanization on runoff after frequent rainfall events. *Journal of Land Use Science*, 13(1-2), 81-101.**

Category: Agriculture. [Link](#)

Urbanization dynamics are commonly subjected to powerful market forces, only partly managed by land-use plans. The density, location and pattern of urbanized areas affect rainfall-runoff relations. Consequently, it is essential to understand future impacts of urbanization on runoff and produce focused regulation. The goal was to analyze land cover scenarios and their impact on runoff in an urbanized watershed in Israel. Present and predicted land-cover scenarios in a densely populated watershed were produced. The runoff response to rainfall was then simulated using a hydrological model. The impact of implementing afforestation and quarrying national outline plans was considered. By the year 2050, 50% of the watershed will be urbanized with a linear increase in runoff response. Afforestation and quarrying plans show little effect on runoff, although quarries may decrease runoff through percolation. As urbanization is expected to continue spreading in adjacent watersheds, statutory measures should be applied to mitigating runoff.

- 56. Paz, S. (2006). The West Nile Virus outbreak in Israel (2000) from a new perspective: the regional impact of climate change. *International journal of environmental health research*, 16(1), 1-13.**

Category: Public Health. [Link](#)

The West Nile Virus (WNV) outbreak in Israel in 2000 appeared after medical and climatic warning signs. Re-analysis of the epidemic from a new viewpoint, the regional impact of global warming, especially the worsening in the summers' heat conditions, is presented. The disease appeared averagely at a lag of 3–9 weeks (strongest correlation = lag of 7 weeks). The minimum temperature was found as the most important climatic factor that encourages the disease earlier appearance. Extreme heat is more significant than high air humidity for increasing WNV cases. An early extreme rise in the summer temperature could be a good indicator of increased vector populations. While 93.5% of cases were in the metropolitan areas, the disease was not reported in the sub-arid regions. The outbreak development was comparable to the cases from Romania (1996) and NYC (1999). Each of those epidemics appeared after a long heatwave.

- 57. Poortinga, W., Whitmarsh, L., Steg, L., Böhm, G., & Fisher, S. (2019). Climate change perceptions and their individual-level determinants: A cross-European analysis. *Global Environmental Change*, 55, 25-35.**

Category: Behavioral science. [Link](#)

There is now an extensive literature on the question of how individual-level factors affect climate change perceptions, showing that socio-political variables, notably values, worldviews and political orientation, are key factors alongside demographic variables. Yet little is known about cross-national differences in these effects, as most studies have been conducted in a single or small number of countries and cross-study comparisons are difficult due to different conceptualisations of key climate change dimensions. Using data from the European Social Survey Round 8 (n = 44,387), we examine how key socio-political and demographic factors are associated with climate change perception across 22 European countries and Israel. We show that human values and political orientation are important predictors of climate change beliefs

and concern, as are the demographics of gender, age, and education. Certain associations with climate change perceptions, such as the ones for the self-transcendence versus self-enhancement value dimension, political orientation, and education, are more consistent across countries than for gender and age. However, even if the direction of the associations are to a large extent consistent, the sizes of the effects are not. We demonstrate that the sizes of the effects are generally smaller in Central and Eastern European countries, and that some demographic effects are larger in Northern European as compared to Western European countries. This suggests that findings from one country do not always generalize to other national contexts.

58. Portman, M.E. (2018). Policy Options for Coastal Protection: Integrating Inland Water Management with Coastal Management for Greater Community Resilience. *Journal of Water Resources Planning and Management*, 144(4), 05018005.

Category: Geography (Planning). [Link](#)

Coastal cliff collapse is a problem faced along many shorelines the world over, especially as cliffs tend to be affected by global climate change. Problems of cliff collapse can benefit from interdisciplinary policy responses that synthesize principles of three paradigms: integrated watershed management, integrated coastal zone management, and water-sensitive urban design. This exploratory, largely empirical research looks at how local and national policies address coastal cliff collapse along Israel's Mediterranean seashore, in a way that highlights impediments and opportunities for integrated planning. Findings emphasize the importance of addressing urban runoff to prevent coastal cliff collapse using practices originating based on the three paradigms. Conclusions provide insights about policies that could improve the resilience of coastal communities suffering from coastal cliff collapse in the era of climate change. Particularly, greater cross-scale (regional and national) efforts are needed to coordinate proper drainage of the watershed that along coastal cliffs involves integrating principles of watershed management, coastal management, and urban design practices. These should be aimed at implementing practices that reduce phenomena that lead to cliff destabilization, such as ensuring runoff diversion and implementing building setbacks. The case study research leads to recommendations for policy mechanisms that provide opportunities to implement such practices.

59. Portman, M.E. (2019). Detached islands: Artificial islands as adaptation challenges in the making. *DIE ERDE—Journal of the Geographical Society of Berlin*, 150(3), 158-168.

Category: Geography (Planning). [Link](#)

There is surprisingly little information and concern within academic literature in the field of coastal or marine planning and management related to the issue of artificial islands. This is particularly noteworthy considering the climate change phenomenon, vis-à-vis sea-level rise, the urgent need for adaptation, efforts aiming for sustainable use of coastal areas, and the recent focus in academic circles on marine spatial planning. Most literature (including grey literature) on artificial islands appears in the engineering and geology disciplines and is focused on energy extraction, i.e., oil and gas. Yet some coastal nations are intent on solving problems of lack of space and other resource shortages through construction of near-shore artificial islands for myriad uses, including commercial, residential and transportation infrastructure. This paper presents a limited review of the policy literature about planning and construction of artificial islands. It reflects what repercussions artificial islands portend for marine conservation, sustainability and, most importantly, how climate change adaptation is highlighted or neglected in spatial solutions addressed by the building of nearshore artificial islands. The Israeli situation, where tenders have been recently published calling for planning and building of islands in the Mediterranean Sea, serves as an example.

60. Rabinowitz, D. (2012). Climate injustice: CO₂ from domestic electricity consumption and private car use by income decile. *Environmental Justice*, 5(1), 38-46.

Category: Environmental Justice. [Link](#)

Environmental justice is primarily concerned with uneven distribution of environmental harms and with the consequences such inequality often has for individual and community well-being, development, and growth. Recent expansion in quantity and improvement in quality of data on current and historic greenhouse gas (GHG) emission levels by country has drawn attention to differentiated national responsibilities for the intensification of the atmosphere's greenhouse effect and, concomitantly, for global warming. This shift is pertinent for environmental justice, a field that tended in the past to focus more on the uneven distribution of environmental harms than on responsibility for initially causing them. Building on the new sensitivity to differentiated responsibility for climate change, this article focuses on a hitherto understudied field: differences in GHG emissions between populations within countries. Using Israel as a case study, and focusing on GHG from domestic electricity consumption (DEC) and private vehicle use (PVU), it looks at emissions by income decile. Results suggest that individuals belonging to the top income decile are responsible for per-capita emissions that are approximately 25 times higher than those of individuals belonging to the bottom decile, and that carbon inequality between the top and bottom deciles can sometimes amount to over four times the monetized consumer inequality between them. Recognition of GHG emission as multiplier of socio-economic inequalities is essential for the design and implementation of ambitious, workable, and fair corrective climate policies.

61. Rabinowitz, D. (2013). In-Country Disparities in Greenhouse Gas Emissions and Their Significance for Politicizing a Future Global Climate Pact. *Theoretical Inquiries in Law*, 14(1), 173-190.

Category: Environmental Justice. [Link](#)

Mainstream thought on environmental justice emphasizes disparities between populations in terms of their exposure to environmental risks. Climate change has recently shifted attention from vulnerability to responsibility, with much of the research and dissemination of results accentuating differential contributions on the part of various groups to CO₂ emissions and their accumulation in the atmosphere. But efforts to monitor, mitigate and adapt to climate change are largely premised on sovereign states as the main units of analysis, and on comparisons between them as the primary tool for designing policy. This approach, which reifies climate change as a technical, distant and detached issue, arrests the long overdue politicization of the atmosphere. This Article, which uses data from Israel on differentiated levels of CO₂ emissions by income decile, suggests that hitherto overlooked in-country disparities in CO₂ emissions are an integral part of the problem and of potential ways to tackle it. Offering a critique of attempts to use distributive justice as a basis for a global climate pact, it calls for further in-country analysis of emissions and a better understanding of how the outcomes of those attempts might become relevant to more people globally. Such insights, it argues, are essential for climate policies to become politicized and thus gain prominence and urgency in political debates, campaigns, and eventually on the executive agenda of all levels of government.

62. Reznik, A., Feinerman, E., Finkelshtain, I., Kan, I., Fisher, F., Huber-Lee, A., & Joyce, B. (2016). The cost of covering costs: A nationwide model for water pricing. *Water Economics and Policy*, 2(04), 1650024.

Category: Economics. [Link](#)

This study offers a high-resolution model of nationwide water supply. The model is sufficiently detailed to represent all main water sources in an economy, the principal segments of the conveyance system, urban, industrial and agricultural demand regions, and various water types,

including fresh, saline and recycled. Calibrated for Israeli 2010 data, we find that the optimal extraction of fresh water is only 2% larger than the total observed supply from those sources. However, for some specific sources, the deviation between optimal and observed quantities is significant. Assuming average constant recharge, the optimal aggregated desalination is 57% of the 2010 desalination capacity and only 33% of the present desalination capacity. Even with an assumed 40% decline in recharge (for example, due to climate change), the model uses only 50% of the present desalination capacity. This may suggest that the construction of desalination facilities in Israel, which began in 2005, could have been delayed. The model establishes a comprehensive system of pumping levies and user fees that support the optimal allocation. However, due to considerable scale economies, the average cost is almost 50% larger than the marginal cost. The implications are that the welfare cost of the recent Israeli Balanced Budget Water Economy legislation is more than 100 million USD per year, about 10% of the water economy share of the GDP.

- 63. Rimmer, A. (2008). Hydrological models to support water policy: The case of Lake Kinneret watershed, Israel. *Managing Water Resources in Time of Global Change: Mountains, Valleys and Flood Plains*, 50-66.**

Category: Public Policy. No link.

Analysis of climate change scenarios in the Middle East region reveal changes of rainfall distribution and increase of evaporation throughout the seasons. These changes are expected to affect both water availability in the upper catchments of the Jordan River, and the salinity of Lake Kinneret, the source of 30 percent of Israel's water supply. By application of the system modeling approach to both problems, we learned the nature of each system and used it to predict future scenarios of water availability and salinity under various climate change scenarios. The issues of water availability and salinity in the Lake Kinneret watershed are presented in this chapter. We describe here the problem, the various models that were proposed to address the problem, the basic structure of the proposed model, the results of the prediction analysis, and the conclusions regarding future operation policy and feasibility of interventions.

- 64. Rosen, A.M., & Rivera-Collazo, I. (2012). Climate change, adaptive cycles, and the persistence of foraging economies during the late Pleistocene/Holocene transition in the Levant. *Proceedings of the National Academy of Sciences*, 109(10), 3640-3645.**

Category: Archeology. [Link](#)

Climatic forcing during the Younger Dryas (similar to 12.9-11.5 ky B.P.) event has become the theoretical basis to explain the origins of agricultural lifestyles in the Levant by suggesting a failure of foraging societies to adjust. This explanation however, does not fit the scarcity of data for pre-domestication cultivation in the Natufian Period. The resilience of Younger Dryas foragers is better illustrated by a concept of adaptive cycles within a theory of adaptive change (resilience theory). Such cycles consist of four phases: release/collapse (Omega); reorganization (alpha), when the system restructures itself after a catastrophic stimulus through innovation and social memory-a period of greater resilience and less vulnerability; exploitation (r); and conservation (K), representing an increasingly rigid system that loses flexibility to change. The Kebarans and Late Natufians had similar responses to cold and dry conditions vs. Early Natufians and the Pre-Pottery Neolithic A responses to warm and wet climates. Kebarans and Late Natufians (alpha-phase) shifted to a broader-based diet and increased their mobility. Early Natufian and Pre-Pottery Neolithic A populations (r- and K-phases) had a growing investment in more narrowly focused, high-yield plant resources, but they maintained the broad range of hunted animals because of increased sedentism. These human adaptive cycles interlocked with plant and animal cycles. Forest and grassland vegetation responded to late Pleistocene and early Holocene climatic fluctuations, but prey animal cycles reflected the impact of human hunting pressure. The combination of these three adaptive cycles results in a model of human adaptation, showing potential for great sustainability of Levantine foraging systems even under adverse climatic conditions.

- 65. Rotem-Mindali, O., Michael, Y., Helman, D., & Lensky, I. M. (2015). The role of local land-use on the urban heat island effect of Tel Aviv as assessed from satellite remote sensing. *Applied Geography*, 56, 145-153.**

Category: Geography (Urban Planning). [Link](#)

Climate change in cities has received much focus in the past few decades. Heat stress in urban areas has an adverse effect on human health and is expected to worsen in the future due to the global warming. Vegetation has been shown to mitigate this effect, but introducing 'green' areas into the metropolitan space is a challenging task. We assessed the thermal load in terms of surface temperature in Tel Aviv, the biggest metropolitan area of Israel. The thermal effect of four different urban land uses was estimated. Specifically, we compared the cooling effect of residential areas with high vegetation cover (referred here as 'green' residential) to that of small to medium size (2-40 ha) public parks. To this end, we used satellite data of land surface temperature (LST) and the Normalized Difference Vegetation Index (NDVI), as a surrogate for vegetation cover. High-temporal data were combined with high spatial resolutions data to produce 10-year average LST and NDVI maps at high spatial resolution over Tel Aviv. As expected, industrial areas had the highest LST due to lowest ratio of vegetation to free space area (1%), while 'green' areas displayed the lowest LST. Green residential and small-medium public parks had comparable thermal loads, with green residential having slightly lower LST (by 0.5 degrees C). In general, small-medium public parks displayed higher LST than expected. Inefficient use of free spaces for vegetation, i.e., relatively low vegetation cover to free space ratio, was probably the main cause for this. Public parks had a higher local cooling effect, but a less continuous one on the proximate surrounding (30-90 m from the park), probably due to their relative location in the urban fabric. Our results suggest that 'greening' areas within the private urban space should be encouraged at the expense of building new small-medium parks in metropolitan areas that lack the sufficient free space for larger parks. The outcome of this study may have key implications for urban planners seeking to mitigate urban heat island effects under the limitation of existing dense urban layout.

- 66. Schmidt, N.M., Teschner, N., & Negev, M. (2018). Scientific advice and administrative traditions: The role of chief scientists in climate change adaptation. *Review of Policy Research*, 35(6), 859–880.**

Category: Public Policy. [Link](#)

The role of the chief scientist (CS), a key administrative position in various Israeli ministries, is to fund policy-oriented research and support evidence-based decision-making. Has the CS's role promoted or constrained incorporation of scientific advice regarding climate change adaptation into governmental policy? Have administrative traditions affected the adaptation planning process in Israel? Analysis of documents and 26 in-depth interviews with key stakeholders sheds light on the ongoing climate change adaptation policy formulation process. Our study reveals that the CS of the Ministry of Environmental Protection functions as a bridge at different interfaces and can be characterized as a boundary worker between institutions. The inherent independence of this position facilitates the CS's ability to initiate, foster, and prioritize complex issues such as adaptation. Our findings further suggest that the perception that Israel has already adapted, or will easily adapt, has negatively affected the adaptation process.

- 67. Schoenfeld, S. (2010). Environment and human security in the eastern Mediterranean: regional environmentalism in the reframing of Palestinian–Israeli–Jordanian relations. *Achieving environmental security: Ecosystem services and human welfare*, 69, 113.**

Category: International Relations. [Link](#)

A regional environmental movement reaches across Palestinian, Israeli, and Jordanian political and geographic boundaries. This chapter describes the structure, outlook, achievements, and

challenges of several regional environmental civil society initiatives that have been active since the 1990s: the water and environment department of the Israel Palestine Center for Research and Information, EcoPeace/Friends of the Earth Middle East, and the Arava Institute for Environmental Studies. Particular attention is paid to the challenge of frame alignment. Dominant nationalist discourses in the region do not align well with a discourse of a fragile ecosystem that requires robust regional institutions. On the other hand, a discourse of regional ecosystem fragility aligns well with the discourses of sustainable development and of a global and regional environmental crisis in which the Eastern Mediterranean will be particularly harshly impacted by climate change.

- 68. Selby, J., & Hoffmann, C. (2012). Water scarcity, conflict, and migration: a comparative analysis and reappraisal. *Environment and planning C: government and policy*, 30(6), 997-1014.**

Category: Public Policy. [Link](#)

How should we characterise the relations between environmental scarcity, conflict, and migration? Most academic and policy analyses conclude that scarcities of environmental resources can have significant impacts upon conflict and migration, and claim or imply that within the context of accelerating global environmental changes these impacts are likely to become more significant still. Many analyses admittedly recognise that these impacts are often indirect rather than direct and that there exist multiple 'drivers' of conflict and migration, of which environmental stresses are but one. We argue that even these qualifications do not go far enough, however: they still overstate the current and likely future significance of environmental changes and stresses in contributing to conflict and migration and underemphasise a far more important causal pathway—from conflict and migration to environmental vulnerabilities. These arguments are advanced via a comparative analysis of water-migration-conflict linkages in Cyprus and Israel and the West Bank and Gaza.

- 69. Shefer, I. (2019). Policy transfer in city-to-city cooperation: implications for urban climate governance learning. *Journal of Environmental Policy & Planning*, 21(1), 61-75.**

Category: Public Policy. [Link](#)

City-to-city cooperation is one mechanism in which climate policies are developed, transferred and learned between cities. However, the process of transfer of urban climate policies and sustainability in bilateral cooperation that embeds knowledge gaps and different political contexts is under-researched. Especially missing is an understanding of the modes, sources and depth of learning in these constellations, and their relations to urban climate governance. This paper asks to better understand this learning relationship. It does so by applying guiding questions from policy transfer framework and governance learning literature to the cooperation between two German cities (Berlin and Freiburg) and one Israeli city (Tel Aviv-Yafo). By aligning qualitative methods with these frameworks, the paper reveals that in this constellation learning is mostly sequential, from exogenous sources and with no substantial contribution to urban climate governance in the recipient city (Tel Aviv). However, learning produces modest policy changes and has a potential of scaling horizontally and vertically in Israeli domestic settings.

- 70. Sternberg, M., Gabay, O., Angel, D., Barneah, O., Gafny, S., Gasith, A., ... & Rilov, G. (2015). Impacts of climate change on biodiversity in Israel: an expert assessment approach. *Regional Environmental Change*, 15(5), 895-906.**

Category: Environment. [Link](#)

The Mediterranean region is both a global biodiversity hot spot and one of the biomes most strongly affected by human activities. Ecologists and land managers are increasingly required to advise on threats to biodiversity under foreseeable climate change. We used expert surveys

to evaluate current understanding and uncertainties regarding climate change impacts on biodiversity in terrestrial, inland freshwater, and marine ecosystems of Israel. Finally, we propose a response strategy toward minimizing these changes. The surveys and the published literature indicated that the main climate change impacts in Israel include ongoing deterioration of freshwater habitats, decline of shrubland and woodland areas, and increased frequency and severity of forest fires. For the Mediterranean Sea, the surveys predict further introduction and establishment of invasive species from the Red Sea, accelerated erosion of coastal rocky habitat, and collapse of coastal rocky platforms. In the Gulf of Aqaba, Red Sea, corals may be resilient to foreseen climate change due to their high tolerance for rising water temperatures. Despite these predictions, science-based knowledge regarding the contribution of management toward minimizing climate change impacts on biodiversity is still lacking. Habitat loss, degradation, and fragmentation are presently the primary and immediate threats to natural ecosystems in Israel. Protection of natural ecosystems, including local refugia, must be intensified to maintain existing biodiversity under pressure from mounting urban development and climate change. This protection policy should include ecological corridors to minimize the consequences of fragmentation of existing natural habitats for species survival. A longer-term strategy should mandate connectivity across environmental and climatic gradients to maintain natural resilience by allowing reorganization of natural ecosystems facing climate change.

71. Tal, A. (2016). Will we always have Paris? Israel's tepid climate change strategy. *Israel Journal of Foreign Affairs*, 10(3), 405-421.

Category: Public Policy. [Link](#)

On November 14, 2016, the Israeli government ratified the Paris Agreement on Climate Change.¹ It was the 113th country to do so—bringing the total of greenhouse gases represented by participating countries worldwide to some 79 percent.² The decision came while Israel's delegation was already in Marrakesh, where the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) was convening to continue international efforts to prevent an impending climate crisis. The year 2016 is set to become the hottest recorded year globally,³ the third consecutive year that temperature records have been shattered.⁴ More and more scientists warn that concentrations of atmospheric greenhouse gases will soon cause irreparable climatic chaos. The time for hesitation is long past. Because climate-associated impacts are non-linear, immediate action is required to reduce greenhouse gas emissions and stabilize atmospheric carbon concentrations.

72. Tal, A. (2018). Addressing desalination's carbon footprint: the Israeli experience. *Water*, 10(2), 197.

Category: Public Policy. [Link](#)

Given the extraordinary proliferation of seawater desalination plants, Israel's transition to become a country that almost exclusively relies on desalination for municipal water supply is instructive as a case study, especially given concerns about the technology's prodigious carbon footprint. This article offers a detailed description of the country's desal experience with a focus on the associated energy requirements, environmental policies and perspectives of decision makers. Israel's desalination plants are arguably the most energy-efficient in the world. The present consensus among government engineers, however, is that meaningful improvements in energy efficiency are unlikely in the foreseeable future. Official evaluations of increased introduction of solar-driven reverse osmosis (RO) processes concluded that mitigation of greenhouse gases will have to be attained in industries other than the water sector. The article details myriad environmental benefits that desalination has brought the country. However, it argues that given the imperative of stabilizing atmospheric concentration of carbon, and the modest renewable energy supply to Israel's national grid to date, public policy can no longer offer the water industry a path of least resistance. Present plans envision a significant expansion of Israel's desal infrastructure, requiring a far higher commitment to renewable energy supply and regulations phasing down present energy demands.

- 73. Tal, A. (2019). Climate change's impact on Lake Kinneret: Letting the data tell the story. *ScTEen*, 685, 1272-1275.**

Category: Environment. No link. No abstract.

- 74. Tal, A. (2019). The implications of climate change driven depletion of Lake Kinneret water levels: the compelling case for climate change-triggered precipitation impact on Lake Kinneret's low water levels. *Science of the Total Environment*, 664, 1045-1051.**

Category: Environmental policy. [Link](#)

The dramatic drop in water levels in the Kinneret Lake (Sea of Galilee) during the past years is evaluated. Recently published measurements of temperature, precipitation and other hydrological data support the position that climate change is driving the contraction of this iconic water resource. The article presents a range of evidence confirming long-term shifts in the hydrological dynamics of the watershed and details the associated ecological implications. In response to these trends, Israel's government has decided to build a desalination plant along the Northern Mediterranean shoreline that will provide water to replenish the depleted water levels in lake. Given the likelihood of continued global warming expediting increased evaporation and reduced precipitation, such climate adaptation policies constitute prudent public policy.

- 75. Tal, A. (2020). Unkept Promises: Israel's Implementation of Its International Climate Change Commitments. *Israel Journal of Foreign Affairs*, 1-31.**

Category: Public Policy. [Link](#). No abstract.

- 76. Tal, A., & Cohen, J. A. (2007). Bringing Top-Down to Bottom-Up: A new role for environmental legislation in combating desertification. *Harvard Environmental Law Review*, 31, 163.**

Category: Public Policy. [Link](#). No abstract.

- 77. Teschner, N. A., McDonald, A., Foxon, T. J., & Paavola, J. (2012). Integrated transitions toward sustainability: The case of water and energy policies in Israel. *Technological Forecasting and Social Change*, 79(3), 457-468.**

Category: Geography. [Link](#)

Transition Management literature has examined how long-term transitions could be directed toward greater sustainability. However, it has mostly taken a sectoral approach which neglects the potential relationships between environmental changes and policy dynamics in different sectors. This paper examines parallel and interrelated dynamics in the Israeli water and energy sectors by combining insights from the literature on policy dynamics, transition management, co-evolution, and policy integration. The developed approach examines how sectoral transitions may be coupled and technological regimes may co-evolve. Israel has battled water, energy and other scarcities from its formation. Consecutive dry years, the loss of stream flows, salinization of the coastal aquifer, and severe pollution are problems facing water managers, while air pollution, imported fossil fuels and carbon emissions are salient energy issues. Water and energy sectors are both in transition because earlier policies have resulted in socially-induced scarcity, degradation of environmental assets and loss of adaptive capacity to respond to future challenges. Current approaches to water and energy scarcities have evolved around technological configurations which emphasize traditional supply side solutions such as seawater desalination and additional power plants. They may be difficult to change without explicit integrative transitions management.

- 78. Tubi, A., & Feitelson, E. (2016). Drought and cooperation in a conflict prone area: Bedouin herders and Jewish farmers in Israel's northern Negev, 1957–1963. *Political Geography*, 51, 30-42.**

Category: Geography. [Link](#)

Climate change is increasingly considered a security problem by academics and politicians alike. Although research is challenging such neo-Malthusian views, it focuses on conflict, or lack thereof, paying limited attention, if any, to cooperation. This study examines the effect of a severe drought on a spectrum of both conflict and cooperation in a highly incendiary setting, between Muslim Bedouin herders and Jewish agricultural settlements in Israel's semi-arid northern Negev region. This region, lying between the Mediterranean zone and the Negev Desert, has historically been a battle ground between farmers and pastoralists. Using archival data, both conflictive and cooperative interactions between the two groups during the 1957-63 drought, the worst in the 20th century, were examined. The results indicate that although the entire range of responses occurred, violence was limited and occurred only when some of the Bedouins migrated to the more northern Mediterranean zone. In the semi-arid northern Negev the Bedouins and two settlements engaged in substantive cooperation and assistance. Grazing on damaged crops in return for payment was also practiced during the drought. A number of factors that affected both conflict and cooperation are identified. The severity of conflicts increased when farmers and herders lacked previous familiarity, while the need to reduce the drought's impacts and settlements' left-wing political affiliation formed main incentives for cooperation. Measures taken by state institutions to directly reduce frictions and to provide relief assistance were central to the overall limited level of conflict, but also reinforced the power disparities between the groups.

- 79. Tubi, A., & Feitelson, E. (2019). Changing drought vulnerabilities of marginalized resource-dependent groups: a long-term perspective of Israel's Negev Bedouin. *Regional Environmental Change*, 19(2), 477-487.**

Category: Geography. [Link](#)

Marginalized resource-dependent groups (MRDGs) are highly vulnerable to the impacts of climate change and weather extremes. However, research on MRDGs tends to analyze their vulnerability in a specific point in time, thereby neglecting the examination of changes that evolve over time spans that are similar to those on which climatic changes occur. This study adopts a long-term perspective, examining changes in the vulnerability of the marginalized and traditionally agro-pastoralist Bedouin residing in the semi-arid and drought-prone northern Negev region. Utilizing multiple data sources, the study compares the vulnerability of the Bedouin during two severe droughts separated by a 40-year period the 1957-63 drought and the 1998-2000 drought. The changes in the impacts of the droughts on the Bedouin are identified and analyzed, as well as the main factors explaining these changes. The results indicate that the vulnerability of the Bedouin to droughts has declined considerably, largely due to integration in Israel's market economy and improved access to water infrastructure. Large-scale economic transformations and changes in settlement and water supply patterns explain much of the reduction in vulnerability. However, the Bedouin have remained marginalized and are vulnerable to fluctuations in market conditions. Thus, while we find that the vulnerability of even the most vulnerable groups can decline over time, we also observe that their vulnerability may change its form from climate vulnerability to more general social vulnerability.

- 80. Tubi, A., Fischhendler, I., & Feitelson, E. (2012). The effect of vulnerability on climate change mitigation policies. *Global Environmental Change*, 22(2), 472-482.**

Category: Public Policy. [Link](#)

Climate change is likely to adversely affect many countries throughout the world, but the responses of different countries to this threat vary widely. Attempts to explain the differences

in countries' mitigative policies have been largely deficient. This study seeks to assess the degree to which vulnerability may improve the level of explanation of adopted mitigation policies, studying over 90 countries between 1990 and 2011. Vulnerability is defined to be comprised of two basic factors: impacts (expected damages due to climate change) and adaptive capacity (the ability to adjust to these damages). As there may be a gap between declared and implemented policies, these components of mitigation policy are examined separately. In addition, other variables which mediate between these 'extreme ends' of mitigation policies are tested. The effect of vulnerability on climate change mitigation policies is examined by multiple regressions, incorporating a wide range of control variables. The results indicate that climate impacts do not affect mitigation policies. Adaptive capacity has a positive effect on the level of declared policy, but this effect becomes insignificant once implemented policy is examined. However, other tests suggest a possible transition from declarations to actions by high adaptive capacity countries. This finding suggests that high adaptive capacity countries do not view mitigation and adaptation as substitutes. Further analyses indicate that the insignificance of impacts is caused by the uncertainty in their assessment.

- 81. Verschoor, M., Albers, C., Poortinga, W., Böhm, G., & Steg, L. (2020). Exploring relationships between climate change beliefs and energy preferences: A network analysis of the European Social Survey. *Journal of Environmental Psychology*, 101435.**

Category: Psychology. [Link](#)

Understanding public attitudes to climate change and energy preferences is key to a successful transformation to a low-carbon society. While many studies have examined relationships between specific variables, little is known about the breadth of relationships between multiple climate and energy-relevant concepts. In this paper we used network models to explore and visualize relationships between climate change beliefs and energy preferences, using data from Round 8 of the European Social Survey (ESS8). ESS8 was conducted in 22 European countries and Israel. We found positive relationships between climate change salience, climate change beliefs, climate change concern, personal norm, and personal outcome expectancy, in line with prominent theories within the area. Moreover, beliefs on efficacy of actions of different actors (i.e., governments, large groups of people) to reduce climate change were positively related, and participants had consistent preferences for fossil energy sources or renewable energy sources, respectively. Furthermore, two types of energy security concerns could be distinguished, reflecting temporary and long term threats to energy security, respectively. Energy supply source preferences, energy policy support, and energy conservation behaviors were mostly not uniquely related to the other module variables. Furthermore, the relationships between variables, reflected in the network structure, were comparable across countries.

- 82. Weinthal, E., Zawahri, N., & Sowers, J. (2015). Securitizing water, climate, and migration in Israel, Jordan, and Syria. *International Environmental Agreements: Politics, Law and Economics*, 15(3), 293-307.**

Category: Public Policy (International Relations). [Link](#)

Protracted droughts and scarce water resources, combined with internal and cross-border migration, have contributed to the securitization of discourses around migration and water in much of the Middle East. However, there is no clear understanding of the conditions under which water, climate change, and migration are conceived of as security concerns or of their policy implications. This article explores the different means through which Israel, Jordan, and Syria have framed issues of water, climate change, and migration as national security concerns. Based upon an analysis of governmental and publicly available documents, coupled with field interviews with Israeli and Jordanian policymakers, experts, and nongovernmental organizations, we identify two different framings of the water–climate–migration nexus, depending on whether migration is largely external or internal. In Israel and Jordan, concern with influxes of external migrants elevated migration as a security issue in part through impacts

on already-scarce water resources. In Syria, where severe drought in the early 2000s prompted large-scale internal migration, officials downplayed connections between scarce water resources, drought, and internal migration, part of a broader pattern of rural neglect. Unlike much of the conventional literature that has posited a linear relationship between climate change, decreasing water availability, and migration, we provide a more robust picture of the water–climate–migration nexus that shows how securitized framings take different forms and produce several unintended consequences.

- 83. Weissbrod, L., & Weinstein-Evron, M. (2020). Climate variability in early expansions of *Homo sapiens* in light of the new record of micromammals in Misliya Cave, Israel. *Journal of Human Evolution*, 139, 102741.**

Category: Archeology. [Link](#)

In this study, we provide the first taphonomic and taxonomic descriptions of the micromammals from Misliya Cave, where recently a *Homo sapiens* hemimaxilla has been reported. This finding significantly extends the time frame for the out-of-Africa presence of anatomically modern humans. It also provides an opportunity to reassess variation in early modern human population responses to climate change in the Levantine sequence. Information on species ranking and diversity estimations (Shannon functions) is obtained from quantitative data across 31 Levantine assemblages and investigated in a broad comparative frame using multivariate analyses. Recent models of human-climate interactions in the late Early-Middle Paleolithic of the southern Levant have drawn heavily on on-site associations of human fossils with remains of micromammals. However, there has been little, if any, attempt to examine the long-term picture of how paleocommunities of micromammals responded qualitatively and quantitatively to climatic oscillations of the region by altering their compositional complexity. Consequently, our understanding is vastly limited in regard to the paleoecosystem functions that linked past precipitation shifts to changes in primary producers and consumers or as to the background climatic conditions that allowed for the development of highly nonanalog ancient communities in the region. Although previous studies argued for a correspondence between alternations in *H. sapiens* and Neanderthal occupations of the Levant and faunal shifts in key biostratigraphic indicator taxa (such as Euro-Siberian *Ellobius* versus Saharo-Arabian *Mastomys* and *Arvicanthis*), our data indicate the likelihood that early *H. sapiens* populations (Misliya and Qafzeh hominins) persisted through high amplitudes of paleoecological and climatic oscillations. It is unlikely, given these results, that climate functioned as a significant filter of early modern human persistence and genetic interactions with Neanderthals in the Levant.

- 84. Yeomans, L., Richter, T., & Martin, L. (2017). Environment, seasonality and hunting strategies as influences on Natufian food procurement: The faunal remains from Shubayqa 1. *Levant*, 49(2), 85-104.**

Category: Archeology. [Link](#)

Analysis of the faunal assemblage from Shubayqa allows detailed discussion of food procurement through the sequence of occupation spanning the Early and Late Natufian. The influence of climate, season of occupation and hunting techniques on the subsistence economy is discussed. It is argued that targeted prey varied throughout the year, with mass hunting methods providing a large proportion of the meat. In the Late Natufian a decrease in passage migrant birds is interpreted as evidence for gradual drying of the environment, or less reliable rainfall from year-to-year. Availability of resources varied between the two phases of occupation, which, despite preceding the Younger Dryas, suggests that environmental conditions were changing. However, subsistence strategies were easily amended to maintain a plentiful supply of food.

- 85. Zelingher, R., Ghermandi, A., De Cian, E., Mistry, M., & Kan, I. (2019). Economic Impacts of Climate Change on Vegetative Agriculture Markets in Israel. *Environmental and Resource Economics*, 74(2), 679-696.**

Category: Archeology. [Link](#)

Evaluation of climate-change impacts on the economy is essential for setting mitigation programs in the regional and global scales. Integrated assessment models, frequently used for generating projections and designing long-run policies, need reliable information on expected climate-change damages, as well as on the efficiency of adaptation tools available in the private and public levels. This requires integration of economic principles with validated scientific knowledge on technologies and behavior of natural systems. In this work the authors present such integration for the case of evaluation of climate-change impacts on agriculture. They develop a regional scale economic model for analyzing climate-change impacts on agriculture. Non-linear production functions describing yield responses to land allocation, water application and water salinity are integrated into a mathematical programming model. The responses to water quantity and quality are estimated by the use of scientific-based models simulating equilibrium in the root zone among plant's water uptake, soil salinity and soil's water content. Internalization of land allocation among crops is based on Howitt's PMP calibration approach (1995). The model, therefore, enables assessment of climate-change impacts on optimal agricultural management, where adaptation is considered endogenously with respect to both the extensive and intensive margins. The model is applied to the case of Israel. The authors divide the country into 14 regions and estimate regional future precipitation levels by implementing a climate-change down-scaling procedure. Then the model computes optimal agricultural managements under these projected rainfall levels. The results indicate a reduction of about 20% in statewide annual agricultural net-revenues by the year 2100 in comparison to 2002. Land allocated to field crops is increased on the expense of forages and vegetables. The shares of field crops and forages in the agricultural irrigation-water allotment are increased, while that of vegetables declines.

- 86. Ali, S. H. (2016). Reconciling Islamic ethics, fossil fuel dependence, and climate change in the Middle East. *Review of Middle East Studies*, 50(2), 172-178.**

Category: International relations (middle eastern & Islam studies). [Link](#)

The dominance of fossil fuel economies in the Middle East with large Muslim majority populations has led to a recurring question about the role Islamic ethics might play in galvanizing action on climate change. However, the perceived clash of economic values versus environmental norms in Islam deserves more careful examination. This brief article considers the advent of the "Islamic Declaration on Climate Change" which was promulgated in 2015 and considers the tangible steps Muslim government leaders and civil society have taken on this matter. The tangible steps that are being considered with an action plan are discussed in the light of earlier environmental movements within Islam. A brief discussion of environmental norms within Islamic scriptures is also provided to give theological context to this narrative. The establishment of the International Renewable Energy Agency (IRENA) in the UAE as a treaty-based organization with United Nations affiliations is also considered. The environment can play an important peace-building role in the region as exemplified by organizations such as Eco-peace in Palestine, Israel, and Jordan. Based on the analysis of these developments, it is likely that Muslim countries will continue to play a more proactive role in addressing climate change than they are often given credit for in popular discourse.

1. (2011). שרפות יער ושינויי אקלים. *אקולוגיה וסביבה* 12(1). עמ' 8-6.

קטגוריה: אקולוגיה. [קישור](#)

2. אבנימלך, י. (2017). סיכום ומשמעויות לפרק א: משמעות השפעותיו של שינוי האקלים. *אקולוגיה וסביבה* 8(4). עמ' 36-35.

קטגוריה: סביבה. [קישור](#)

3. אבנימלך, י. (2019). שינוי האקלים: אנחנו במרכז אזור העומד בפני בצורת, צמא ורעב. המשמעות למדינת ישראל. *מים והשקיה: ירחון ארגון עובדי המים*, 557, עמ' 10-6.

קטגוריה: מדיניות ציבורית. [קישור](#)

בשל מחסור במים במדינות הסובבות אותנו, צפויה מדינת ישראל להיות מוקפת בעשרות מיליוני פליטי רעב. לא ניתן לעצור אנשים חסרי מזון ומים. זו תמונת מצב מדאיגה מאוד לאזור, לעולם ובוודאי סכנה קיומית למדינת ישראל, לא פחות מהאיומים העולים לתקשורת חדשים לפרקים.

4. אורתר, ל. (2019). אחריות תאגידית לשינוי אקלים: לקראת קץ עידן העשייה הסביבתית מרצון? *אקולוגיה וסביבה* 10(4).

קטגוריה: מדיניות ציבורית. [קישור](#)

5. איתן, א., רוזן, ג., הרמן, ל. ופישהנדלר, א. (2019). שותפויות בין קהילות מקומיות למגזר הפרטי כמנגנון לקידום מיזמים לייצור אנרגיה מתחדשת. *אקולוגיה וסביבה*, 10(4).

קטגוריה: גיאוגרפיה. [קישור](#)

6. אלנבלום, ר. (2018). שבריריות: קריסה, שפע והגילוי מחדש של שינויי האקלים. *איגרת האקדמיה הלאומית הישראלית למדעים*, 40, עמ' 19-12.

קטגוריה: גיאוגרפיה היסטורית. [קישור](#)

7. אלנבלום, ר. (2020). שינויי אקלים, טקסטים כתובים וניתוח קריסת תרבויות. *זמנים: רבעון להיסטוריה*, 142, עמ' 30-18.

קטגוריה: היסטוריה. [קישור](#)

"אין דבר מבוקש יותר בעיר מאשר משהו שאפשר לאכול", כתב בנובמבר 1056 אסמעיל בן פרח מאלכסנדריה שבמצרים, במכתבים שנמצאו בגניזה הקהירית. מי שיוצא החוצה מביתו נרצח ואוכלים את בשרו, ומי שנותר בבית מת ברעב. "זוהי עדות אנושית אחת לכך שבסוף המאה העשירית ובמחצית הראשונה של המאה האחת-עשרה התחוללה במזרח אגן הים התיכון שורה ארוכה של אירועים אקלימיים חריגים, ובהם רצפי בצורות ממושכת שפגעו בנילוס, בסוריה ובארץ ישראל, וכן סדרות רצופות של חורפים קרים במיוחד, שפגעו באזורי הערבה, בחיוראסאן, באיראן ובמסופוטמיה. במאמר זה רוני אלנבלום מנתח את אירועי האקלים הללו, שהיו קצרים יחסית אך חריגים בעוצמתם, ומראה כיצד הם הניעו משברים דמוגרפיים, חברתיים ותרבותיים - והובילו לכדי שינויים מבניים בתרבויות ששגשו בארצות האיסלאם ובביזנטיון.

8. אלפרט, פ. הוכמן, א. ויצחק-בן-שלום, ח. (2019). סקירת התחזיות לשינוי האקלים הצפוי בישראל. אקולוגיה וסביבה 10(4).

קטגוריה: אקולוגיה. קישור

במאמר זה נציג את הייחודיות והרגישות של אקלים הים התיכון וישראל, ובהמשך את התחזיות האקלימיות המוקדמות שהתקבלו למאה ה-21. ראוי לציין שמחקר המודלים הראשון בסקלה מזו-מטאורולוגית שהצביע על הפחתה בגשמי השקעים הקפריסאיים עקב התחממות כדור הארץ נערך כבר לפני 25 שנה (1994), אך מודלים אקלימיים אזוריים ראשונים הורצו על-ידינו בישראל במסגרת המיזם הגרמני GLOWA Jordan River רק בתחילת המאה ה-21. לאחרונה הפעלנו תחזיות אקלימיות למאה ה-21 בשימוש בשיטה חדשנית שכללה ניתוח של השינויים במצבים הסינופטיים היום-יומיים עד לשנת 2100 באשכול של שמונה מודלים אקלימיים מובילים בעולם, ומסקנות ראשונות מהן מוצגות כאן. נוסף על כך, נציג תחזיות אקלימיות למאה ה-21 המתקבלות משימוש במודל האקלימי בהפרדה הגבוהה ביותר שבוצעה אי-פעם מעל ישראל (8 ק"מ מרחק סריג) וגם נזכיר את התוצאות בשיטה שמורידה את סקלות המרחק והזמן הרלוונטיות לגשם לאזור הנחקר (downscaling). לבסוף נציג תחזיות אקלימיות עירוניות לישראל למאה ה-21. את התוצאות לא ניתן לקבל באמצעות מודלים אקלימיים מודרניים, והן מצביעות על חימום עירוני משמעותי מסדר גודל דומה לזה של ההתחממות העולמית. בשיטות השונות והמתקדמות נחזתה ירידה של עד 40% בכמויות הגשם העונתיות לאזור הצפון והמרכז של ישראל, בעוד שבדרום נחזתה עלייה בחורף ובאביב. מעל מזרח הים התיכון המודלים מסכימים לגבי ירידה בכמויות המשקעים השנתיות ב-20-35%, ברצף של ימי גשם ב-20%-10 ובמספר ימי הגשם ב-35%-20. ממוצעי הטמפרטורה העונתיים צפויים לעלות בכ-2.5 מעלות צלזיוס, בייחוד בחורף ובסתיו.

9. אראל, א. (2016). האם עלינו להיות מודאגים מאי החום העירוני? אקולוגיה וסביבה 37(3). עמ' 244-250.

קטגוריה: גיאוגרפיה. קישור

החשש מההשפעה המשולבת של התחממות כדור הארץ ושל אי החום העירוני הוביל למחקרים לא מעטים, שסייעו בניסוח מסמכי מדיניות והמלצות ל-"אפחות (מיתון) אי החום העירוני" (urban heat island mitigation) מטעמם של גופים רבים ומגוונים, כמו האיחוד האירופי או הרשות להגנת הסביבה של ממשלת ארה"ב. ההצדקה ליישום אמצעי מדיניות כאלה היא ההנחה כי הפחתת הטמפרטורות בעיר תביא לחיסכון באנרגיה הדרושה לאקלים בניינים (חימום ומיזוג אוויר), לנוחות תרמית להולכי רגל במרחב העירוני, להפחתת התמותה במהלך אירועי חום חריגים ולהורדת רמות האוזון באוויר העיר. אין עוררין על כך שקיים מתאם גבוה בין העלייה בטמפרטורות האוויר ומספר תופעות שליליות. עם זאת, ממצאי מחקרים שבחנו היבטים שונים של המיקרו-אקלים בעיר מראים כי מדיניות שמתמקדת בהורדת טמפרטורת האוויר – אף כי אין ספק שהיא רצויה בפני עצמה – עלולה להביא ליישום אמצעים שהם במקרה הטוב לא יעילים, ובמקרה הגרוע אף יביאו לתוצאות לא רצויות. מאידך גיסא, ניתן בהחלט להגדיר אמצעים שיביאו לשיפור בנוחות התרמית או להפחתה בצריכת האנרגיה, גם ללא הורדה משמעותית בטמפרטורת האוויר. לשם כך יש להבין את ההשפעות המשולבות של ממדי הרחוב, צפיפות הבנייה, חומרי הריצוף וצמחייה מסוגים שונים על המיקרו-אקלים בעיר, בהתחשב באקלים הישראלי המגוון ובשילוב עם המאמצים לתכנן ערים בצורה רגישה למים.

10. ביתן, מ. צביאלי, ד. ודיסני, ד. (2014). השפעת עליית גובה פני הים במאה ה-21 על מבנים ימיים בחופי הים התיכון של ישראל: הערכת עלויות השבה. אופקים בגיאוגרפיה, 85. עמ' 100-118.

קטגוריה: מדיניות ציבורית (כלכלה). קישור

מאמר זה, מציג מודל כלכלי המעריך את עלות השימור של מבנים ימיים בחופי הים התיכון של ישראל, שתידרש עקב נזקים העלולים להיגרם למבנים אלה כתוצאה מעליית גובה פני הים בהמשך המאה ה-21. המאמר, מציג למקבלי ההחלטות בישראל הערכה של העלויות שיידרשו לשימור מבנים ימיים להם השפעה רבה על כלכלת המדינה ורווחת תושביה, בהנחה ויוחלט לתת מענה לעלייה של גובה פני הים ב-0.5 מ' או 1 מ'. מפלסי גובה אלה, נבחרו כדוגמה בלבד לצורך יישום המודל הכלכלי המוצע במאמר, ולא נועדו לקבוע עמדה בהקשר למחלוקת בקהילה המדעית לגבי שיעור העלייה הצפוי בגובה פני הים בהמשך המאה הנוכחית. במסגרת המחקר הנוכחי, נסקרו 74 מבנים ימיים גדולים לאורך ישראל ומתוכם נבחרו 9 מבנים

מייצגים: נמל חיפה, נמל אשדוד, בריכת מי קירור ומזח הפחם של תחנת הכוח "אורות רביץ", מרינה הרצליה, מתקן התפלת מי-ים בפלמחים, קיר-ים בגן לאומי קיסריה, מערכת שוברי הגלים המנותקים בחוף הטיילת של תל-אביב ותשתיות חופי הרחצה. ניתוח הגורמים ההידרודינמיים הפועלים בחופי ישראל, מלמד כי עיקר הנזק הצפוי להיגרם למבנים הימיים, עלול להתרחש כתוצאה מהגברת גלישת גלים (wave overtopping). תופעה זו, מתרחשת כאשר גלים הפוגעים במבנה ימי (לדוגמה: נמל או מרינה), עוברים מעל שובר הגלים הראשי שלו וחודרים אל חלקו הפנימי והמוגן, דבר העלול לגרום לנזקים חמורים לשובר, למתקני הנמל ולכלי השייט העוגנים בו. ממצאי המחקר מראים כי סה"כ העלות המתקנת שתידרש לשמירת התפקוד הקיים של המבנים הימיים היא 1.5 מיליארד ש"ח וכ-600 מיליון ש"ח, עקב עליית גובה פני הים ב-1 מ' או 0.5 מ' בהתאמה. 0.17% ו-0.07% מהתוצר הלאומי הגולמי של ישראל בשנת 2012, בהתאמה. סכומים אלה לא מבטאים אובדן ערך כולל הנכסים העלולים להיפגע כתוצאה מעליית גובה פני הים. ממצא חשוב נוסף שהתקבל מהשוואת עלויות השימור של המבנים הימיים השונים, מראה כי לא קיים קשר לינארי פשוט בין ההשפעה של העלייה בגובה פני הים והנזק המצטבר לכל מבנה ימי. נזק זה, הינו פונקציה רב ממדית הכוללת גורמים פיסיים שונים, שאינם משתנים לינאריים ביחס לעליית גובה פני הים.

11. בכר, ג. ורון, ט. (2020). משבר הקורונה כהזדמנות להיערכות חדשה לסגירת פער הפליטות בישראל ובעולם. אקולוגיה וסביבה 11(1)

קטגוריה: גיאוגרפיה. קישור

12. בן-ארי, י. וקותיאל, ח. (2014). משטר הטמפרטורות באגן הים התיכון: מגמות שינוי, אירועים קיצוניים ואי-ודאות. אופקים בגיאוגרפיה, 86. עמ' 135-155.

קטגוריה: גיאוגרפיה. קישור

משטר הטמפרטורות על פני כדור הארץ משפיע בצורה ישירה ועקיפה על תהליכים שונים בסביבה הטבעית והאנושית. מכאן, שחשוב לחקור את אופן השתנות הטמפרטורה והאי-ודאות שלה לאורך זמן. המחקר הנוכחי מציג את משטר הטמפרטורות באגן הים התיכון באמצעות ניתוח מגמות שינוי והאי-ודאות של סדרות זמן עבור פרמטרים שונים של הטמפרטורה לאורך שנות המחקר. הניתוח התבצע עבור פרקי זמן שנתיים, חודשיים, ומבחינת אירועי טמפרטורה קיצוניים. חקר מגמות השינוי נותן מידע רב ערך על השתנות הטמפרטורות באגן הים התיכון, ובחינת פרמטר האי-ודאות מאפשר לאבחן האם האי-ודאות עולה או יורדת לאורך זמן על רקע ההתחממות הגלובלית. הנתונים שנבדקו כוללים טמפרטורות מינימום, ממוצע ומקסימום יומיות, שהתקבלו עבור 30 תחנות מדידה באגן הים התיכון, המדידות נערכו בפרקי זמן שונים של עשרות שנים, במהלך המאה העשרים ותחילת המאה העשרים ואחת. ממצאי המחקר מראים מגמת התחממות שנמצאה בעיקר בחודשי הקיץ, אשר באה לידי ביטוי בצורות מגוונות ובאופן שונה באזורים השונים של אגן הים התיכון. גם בחורף נמצאו סימנים של עליית טמפרטורה, למשל בטמפרטורת המקסימום בחודש ינואר. התרחשו גם מקרים מועטים של התקררות שאפיינו במיוחד את מזרח האגן. כמו כן נמצאו מקרים, במיוחד בעונות המעבר, בהם לא נמצא שינוי מגמה מובהק. מבחינת הנתונים הקיצוניים אז בטמפרטורת המינימום המוחלט, נמצאה בעיקר מגמת התמתנות או שלא נמצא שינוי במהלך הזמן. לעומת זאת נמצאה מגמת עלייה בטמפרטורות המקסימום המוחלט, שאפיינה את התקופה שאחרי שנות השמונים. האי-ודאות של עוצמת המופעים נמצאה אקראית בכלל האגן, אך נמצאו מקרים בודדים של שינוי מובהק שהתבטא בעליית האי-ודאות (בעונות האביב והקיץ) או ירידה באי-ודאות (בעונת החורף) לאורך זמן.

13. בר, א. ושרון, א. (2019). ערים בעידן של שינוי אקלים - זירות של פגיעות והיערכות. אקולוגיה וסביבה 10(4), עמ' 84-89.

קטגוריה: גיאוגרפיה. קישור

ערים נחשבות לפגיעות במיוחד לשינוי אקלים ולאירועי מזג אוויר קיצוניים. לנוכח ההכרה בפגיעות העירונית ובעקבות שורה של אסונות טבע שהיכו בערים ברחבי העולם, מתחילות ערים רבות ברחבי העולם להיערך לשינוי האקלים. השיח המרכזי בהיערכות העירונית לשינוי האקלים נסוב סביב מושג החוסן העירוני, המתואר לרוב כיכולת של עיר נתונה להתמודד בהצלחה עם מגוון של לחצים ואירועי קיצון. תוכניות להגברת החוסן העירוני מתייחסות לסך הפעולות שיש לבצע מבעוד מועד כדי להפחית את עוצמת הפגיעה וכן לשפר את היכולת להתאושש לאחריה. המאמר סוקר דוגמאות שונות ליוזמות להגברת החוסן העירוני מרחבי העולם, ומפרט את הסוגיות הרלוונטיות לחוסן העירוני של ערי ישראל. יש לטפל

בסוגיות אלה תוך התחשבות במאפיינים הייחודיים של מדינת ישראל, בדגש על צפיפות וקצב גידול אוכלוסין גבוה.

14. ברקובסקי, א' וא' סופר. (2012). גאופוליטיקה ושינויי אקלים במזרח התיכון, בואו של "השלום האקלימי": "CLIMATICA PAX". אוניברסיטת חיפה: קתדרת חייקין לגאואסטרטגיה.

קטגוריה: גיאופוליטיקה

15. ברקובסקי, א. וסופר, א. (2014). שינויי אקלים, היסטוריה, גיאופוליטיקה, והמזרח התיכון. אופקים בגיאוגרפיה, 85. עמ' 240-221.

קטגוריה: גיאופוליטיקה. קישור

16. גבאי, ע. שטרנברג, מ. אנג'ל, ד. ואחרים (2014). האיומים על המגוון הביולוגי בישראל בעידן של שינוי אקלים – קריאה להקמת מרכז לאומי לחקר שינוי האקלים בישראל. אקולוגיה וסביבה (2)5. עמ' 171-161.

קטגוריה: אקולוגיה (מגוון ביולוגי). קישור

אנו חיים בעידן שמתרחש בו שינוי אקלים בכל רחבי העולם, לרבות באגן הים התיכון ובישראל. אחת ההמלצות של צוות המדענים הבין-ממשלתי המייעץ לאו"ם בנושא שינוי האקלים (IPCC) היא לגבש מדיניות ולנקוט את הצעדים המתחייבים להיערכות לשינוי האקלים באופן שיצמצם את הנזקים מההליך. ההיערכות מתבצעת בשני אופנים: צמצום פליטות גזי החממה (mitigation) והסתגלות של מערכות אנושיות וטבעיות לצורך מיתון הפגיעה בהן [24] (adaptation). רוב המדינות המפותחות הכינו תכנית פעולה לקראת שינוי האקלים, הכוללת אסטרטגיות היערכות במגוון של תחומים, שנכללים בהם גם המגוון הביולוגי ותפקוד המערכות האקולוגיות. בתחום זה, "הסתגלות" פירושה הגדלת היכולת של מערכות טבעיות להגיב לשינויים תוך שמירה על המגוון הביולוגי שבהן. המושג מגוון ביולוגי מתייחס למספר רמות ארגון היררכיות: מגוון גנטי (מגוון תוך-מיני המתבטא בהבדלים גנטיים בין אוכלוסיות ובין פרטים של אותו המין), מגוון של מינים ומגוון של מערכות אקולוגיות. המגוון תלוי לא רק במספר הרכיבים במערכת האקולוגית (גנים, מינים או יחידות נוף), אלא גם ביחסים הכמותיים בין הרכיבים ובהבדלים ביניהם במבנה ובתפקוד [22]. כאן אנו מתייחסים למגוון ביולוגי כאל מדד הקשור למספר, למבנה ולתפקוד של מינים, אוכלוסיות, ומערכות אקולוגיות. כדי לדון בצעדים שניתן לנקוט כהיערכות לשינוי האקלים, יש צורך להעריך תחילה את ההשפעות הצפויות. אף על פי שבעשור האחרון הולך וגדל מספר המחקרים העוסקים בנושא, בישראל נעשו מעט מחקרים בתחום. כמו כן, המודלים האקלימיים העוסקים בהשפעות שינוי האקלים על אגן הים התיכון, כמעט שלא מתייחסים לאזורנו. לאור מיעוט הידע המבוסס מחקרית בנושא השפעות שינוי האקלים על המערכות הטבעיות בישראל, יש קושי להצביע על ההשפעות הצפויות, לא כל שכן לתכנן פעולות היערכות. במחקר זה שנערך ב-2012, נעשה שימוש בסקרי מומחים ובעבודה של צוותי מומחים לשם גיבוש הערכות לגבי השפעות שינוי האקלים על המגוון הביולוגי בישראל, ותכנון היערכות לקראתו. המחקר נערך במסגרת הפעילות של מרכז הידע להיערכות לשינוי אקלים בישראל, שהקים המשרד להגנת הסביבה כמרכיב בהכנת תכנית לאומית להיערכות ישראל לשינוי האקלים. תרחישי האקלים שהמחקר מתייחס אליהם הועלו על-ידי ועדת ההיגוי לנושא האקלים במרכז הידע. למרות הבדלים בתחזיות של מודלים אקלימיים שונים, יש הסכמה לגבי המשך מגמת ההתחממות בעשורים הקרובים בשיעור ממוצע שבין 0.4 ל-0.8 מעלות צלזיוס לעשור, שתלוי באזור ובעונה. באופן כללי ניתן לומר שכמויות המשקעים צפויות לרדת ברוב האזורים, אם כי מגמה זו בלתי מובהקת ברובה. נוסף על כך, צפויה עלייה בשכיחותם של אירועי מזג אוויר קיצוניים, שנות בצורת חריפות, שיטפונות ואירועי שרב [12], כמו גם עלייה מתמדת במפלס פני הים והתחממותו.

17. גל, נ. (2019). היערכות משק החשמל בישראל למשבר האקלים ולהפחתת פליטות גזי חממה. אקולוגיה וסביבה 10(4).

קטגוריה: מדיניות ציבורית. קישור

משבר האקלים צפוי להשפיע על מאפייני הביקוש לחשמל, ומציב אתגר להבטחת אמינות האספקה. למשק החשמל תפקיד מרכזי בהבטחת עמידת המדינה ביעדי הפחתת פליטות גזי חממה: לפי החלטת הממשלה משנת 2015, משק החשמל הישראלי נדרש להפחית את פליטות גזי החממה באמצעות הפחתת הביקוש לחשמל בהיקף של כ-17% ביחס לתרחיש עסקים כרגיל ובאמצעות הגדלת נתח האנרגיה המתחדשת ל-17%

מתמהיל הדלקים. בפועל, קצב גידול הביקוש לחשמל בישראל לא הואט. למרות זאת, משק החשמל צפוי לעמוד בחלקו היחסי ביעד הפחתת הפליטות מוקדם מהמתוכנן, בזכות עמידה ביעד האנרגיה המתחדשת והפחתת השימוש בפחם. מאמר זה סוקר את השפעת שינוי האקלים על משק החשמל בישראל ואת תרומת משק החשמל להפחתת הפליטות.

18. גרבר, מ. (2016). אליה וקוץ בה: הגזים הידידותיים לאוזון תורמים להתחממות העולמית. *אקולוגיה וסביבה* 17(1). עמ' 11-12.

קטגוריה: גיאוגרפיה. [קישור](#)

19. דוידוביץ', א., פלטיניק, ר., ושכטר, מ. ואילון, א. (2019). כיצד ישפיע שינוי האקלים על ענף הביטוח העולמי והישראלי? *אקולוגיה וסביבה* 10(4).

קטגוריה: מדיניות ציבורית. [קישור](#)

20. הלפמן-הרצוג א. (2019). שינוי האקלים יחמיר את מצבם של אנשים הסובלים מאלרגיה. *אקולוגיה וסביבה* 10(4). עמ' 81-83.

קטגוריה: בריאות הציבור. [קישור](#)

21. הנקין, ז., שטרנברג, מ., פרבולוצקי, א. ואחרים. (2020). מגמות שינוי בהרכב הצומח העשבוני, ביצרנות המרעית ובאיכותה על בסיס ניסוי ארוך-טווח בגליל המזרחי. *אקולוגיה וסביבה* 11(2).

קטגוריה: גיאוגרפיה (חקלאות). [קישור](#)

רעיית בקר בשטחים הפתוחים בישראל היא ענף חקלאי יצרני ובו-בזמן אמצעי לשמירה על השטח והנוף. במסגרת מחקר ליעול השימוש במשאבי המרעה העשבוני תוך שימור כר המרעה וקידום ערכי הנוף והסביבה, נערך ניסוי ארוך-טווח בחוות כרי דשא שבגליל המזרחי. במסגרת הניסוי בוצע מעקב אחר הרכב הצומח, יצרנותו ואיכותו כמרעית בממשקי רעייה שונים. מאמר זה מתמקד בשאלה מהו אופי הקשר שבין מדדי צומח שונים לכמות המשקעים השנתית. הניסוי כלל, בין היתר, בדיקה של לחצי רעיית בקר: לחץ מתון (18 דונם לפרה) לעומת חזק (9 דונם לפרה), ושטח ללא רעייה שימש לביקורת. בדיקות יצרנות המרעית נערכו מדי שנה מ-1994 ועד 2019, ובדיקות הרכב הצומח ואיכותו נערכו בשנים 2003–2018. כל הבדיקות בוצעו בחתכים קבועים בשיא עונת הצימוח. בסיכום 26 שנות המחקר נמצא קשר ישר וחיובי בין יצרנות הצומח בשיא עונת הגידול לכמות הגשם השנתית. לחצי הרעייה בחלקות השפיעו על הרכב הצומח ואיכותו, אך הראו מגמות דומות במדדי הצומח ביחס לכמות הגשם. כמו כן, נמצא כי עם העלייה בכמות הגשם השנתית ישנה מגמת עלייה בכיסוי דגניים חד-שנתיים נמוכים, ובאותו זמן מגמת ירידה בכיסוי מיני המצליבים. לא נמצא שינוי בכיסוי הדגניים הרב-שנתיים הגבוהים, קבוצה אשר שומרת על יציבות המערכת. ירידה משמעותית באיכות הצומח כמרעית נמצאה עם הירידה בכמות המשקעים השנתית, ונראה כי מגמה זו תימשך גם בעתיד עם מגמות שינוי האקלים הצפויות.

22. חלפון, נ. ויקותיאל, ח. (2005). שינויים במאפייניו המרחביים העיתיים של הגשם בצפון ישראל ומשמעותם. *אופקים בגיאוגרפיה*, 65-64. עמ' 153-172.

קטגוריה: גיאוגרפיה. [קישור](#)

23. חנין, ד. (2020). שינוי כיוון 2020 – איך מתמודדים עם משבר האקלים וגם משנים בכך את החיים בישראל לטובה? *אקולוגיה וסביבה* 11(2).

קטגוריה: מדיניות ציבורית. [קישור](#)

24. טופורוב, ג., פרל, מ., גרינהוט, צ. לויגרט אייצי'צ'יי, ע. (2019). היערכות חקלאות ישראל לשינוי האקלים. *אקולוגיה וסביבה* 10(4).

קטגוריה: חקלאות. [קישור](#)

שינוי האקלים כבר כאן והוא מתבטא בעליית טמפרטורות, בשינוי בתפוצת המשקעים ובעלייה בשכיחות אירועי קיצון, מגמות הצפויות להימשך בעתיד הנראה לעין. לשינוי האקלים צפויות השלכות נרחבות עבור חקלאות ישראל, הכוללות שינויים בכמות ובאיכות של התוצרת החקלאית, עלייה בתצרוכת המים אל מול הירידה בזמינותם, התגברות תהליכי הגרעת קרקע, תנודות במועדי זריעה ושתילה, עלייה בהיקף ובעוצמה של פגעים ומזיקים בחקלאות הצומח ובמשקי החי, שינויים בזמינות ובמחיר של מזון לבעלי חיים ועוד. למרות זאת, חסרה הערכה כמותית החיונית עבור קביעת סדר עדיפויות ומיקוד מדיניות ההיערכות לשינוי האקלים. חשוב לזהות צעדים המיושמים כבר כיום ומסייעים לבניית חוסנה של החקלאות להתמודדות עם שינוי האקלים. לדוגמה, השיפור הניכר ביעילות ההשקיה והדישון ופיתוח הזנים והגזעים המותאמים לחום וליובש. נוסף על כך, מדינות רבות נסמכות על הערכת סיכונים שיטתית ככלי לקראת גיבוש מדיניות היערכות מושכלת, גישה שראוי לאמץ גם אצלנו. המחברים הם חלק מצוות בין-יחידתי הפועל במשרד החקלאות, לקידום מדיניות היערכות לשינוי האקלים. כצעד ראשון, מופו רגישויות ענפים נבחרים לשינוי אקלים, תוך התייחסות למאפיינים השונים של מגוון ענפים חקלאיים, וזאת באמצעות מפגשי מומחים וראיונות עומק עם מדריכי גידול בכמה ענפים חקלאיים. המיפוי הוביל להגדרת 54 מדדים אקלימיים משמעותיים לחקלאות. בשלב השני, שיתוף פעולה עם השירות המטאורולוגי יצר מיזם ייחודי לניתוח מגמות שינוי האקלים במדדים המשמעותיים לחקלאות. המיזם כולל ניתוח מגמות המדדים שנבחרו בנתונים אקלימיים היסטוריים שנמדדו מאז שנת 1950 מחד גיסא, ומאידך גיסא תחזיות לעתיד לפי מודלים ארוכי טווח. תוצרי המיזם עשויים לשמש להערכה כמותית של הסיכונים הנובעים משינוי האקלים, וזו אמורה לשמש כלי למקבלי ההחלטות בתחום החקלאות, ואולי אף במגזרים נוספים.

25. כהן, ב. (2020). אימוץ התקנה המחייבת בנייה ירוקה בכלל ישראל כרכיב מרכזי באסטרטגיה הלאומית להפחתת פליטות גזי חממה. *אקולוגיה וסביבה* 11(3).

קטגוריה: מדיניות ציבורית. [קישור](#)

26. כפיר, ת. ברטן, מ. ברנשטיין, א. ואחרים. (2020). היערכות מערכת התכנון לטיפול בנחלים על רקע השיטפונות ומשבר האקלים. *אקולוגיה וסביבה* 11(2).

קטגוריה: מדיניות ציבורית. [קישור](#)

27. מילמן, ג. ורבינוביץ, ד. (2017). (אי) שוויון אקלימי: פליטות גזי חממה מצריכת מזון בישראל על פי מדרג סוציו-אקונומי. *סוציולוגיה ישראלית* 18(2).

קטגוריה: סוציולוגיה. [קישור](#)

28. סופר, א. וברקובסקי, א. (2017). שינוי האקלים ומשבר המים במזרח התיכון - מפסימיות לפרגמטיות. *אקולוגיה וסביבה* 8(4). עמ' 6-11.

קטגוריה: מדע המדינה, גיאוגרפיה. [קישור](#)

המאמר דן במשמעות הגיאופוליטית של שינוי האקלים במזרח התיכון, שתרים למשבר המים באזור. יידונו כאן בעיקר המשברים באגני הנלוס, הפרת והחידקל, בדגש על סוריה, עיראק ומצרים. משבר האקלים מצטרף לשורה של משברים אחרים מעשה ידי אדם – גידול דמוגרפי מהיר, היעדר תכנון לאומי, משטרים טוטליטריים והתדרדרות אקולוגית. משבר האקלים מעצים את המחדלים האחרים, מגביר את חוסר היציבות באזור, ומביא להריסתו. עם זאת, שינוי האקלים מספק הזדמנות להתבונן על המצב הבעייתי של האזור מנקודת מבט פרגמטית ולחשוב על פתרונות גיאופוליטיים אמיצים.

29. פז, ש. (2020). משבר האקלים ומגפת הקורונה – תובנות ראשוניות על השוואת הסיכונים לבריאות הציבור. *אקולוגיה וסביבה* 11(1).

קטגוריה: בריאות הציבור. [קישור](#)

30. פז, ש. נגב, מ. ודוידוביץ', נ. (2019). השפעות שינוי האקלים על בריאות הציבור בישראל – מדע ומדיניות. אקולוגיה וסביבה 10(4). עמ' 72-78.

קטגוריה: בריאות הציבור. [קישור](#)

שינוי האקלים מוגדר כאתגר הגדול ביותר לבריאות במאה הנוכחית, שכן הוא משפיע על כל ההיבטים של בריאות האדם ברמה האישית וברמת האוכלוסייה. הסיכונים הולכים וגוברים עם העלייה בגודל האוכלוסייה ובשיעור האוכלוסיות הרגישות שבה, וכן עם העלייה במספרם של התושבים החיים באזורים עירוניים צפופים, וזאת בד בבד עם לחץ גובר והולך על תשתיות בסיסיות שחיוניות לקיומם של חיים בריאים. השפעות שינוי האקלים על הבריאות רבות ומגוונות, ובהן תחלואה ותמותה בשל גלי חום קיצוניים, התפרצות מחלות המועברות על-ידי חרקים ועוד. למרות זאת, בישראל קיימים רק מחקרים ספורים בתחום, וקיימים פערים במחקר בתחומי האפידמיולוגיה, מדעי החברה וניהול מערכות בריאות. בעיקר חסר מחקר בין-תחומי, היות ששינוי האקלים משפיע על הבריאות באופן רב-ממדי. קיימות מספר המלצות ברורות כדי לקדם את ההתמודדות של מערכת הבריאות עם שינוי האקלים בישראל, ובהן – היערכות מערכת הבריאות לטווח הקרוב והרחוק, חינוך אנשי המקצוע, מחקר וכן יישום ותקצוב של התוכנית הלאומית להיערכות לשינוי האקלים. תפיסה של 'בריאות בכל מדיניות', המקדמת תפיסה כוללת, רב-תחומית ורב-מגזרית, מתאימה ביותר גם להתמודדות עם השפעות שינוי האקלים על הבריאות. למרות זאת, עדיין ישנם חסמים רבים ליישומה. כאמור, על מדינת ישראל לפעול כדי להתמודד עם נושא כה מרכזי שכבר כיום משפיע על בריאותנו בממדים רבים, ועתיד להיות הגורם המשפיע ביותר על בריאות הציבור במאה ה-21.

31. קידר, א., קליאוט, נ. ופז, ש. (2009). מסגרות הבנה של בעלי עניין מומחים בתחום המים בהקשר של שינוי אקלים. אופקים בגיאוגרפיה, 72. עמ' 70-95.

קטגוריה: מדיניות ציבורית (מים). [קישור](#)

שינוי האקלים והשלכותיהם מקבלים תשומת לב מרכזית בקהילת המדענים. בעקבות כך, גם ארגונים בין-לאומיים ומדינות החלו בהתוויה של תכניות היערכות והתמודדות עם התופעות הצפויות של ההתחממות הגלובלית. בהיבט הישראלי נערכו מספר מחקרים המצביעים על קשר אפשרי בין שינוי אקלים ותנודות במשטר המשקעים. כמו במרבית הארגונים והמדינות שהתוו מדיניות להיערכות לקראת שינוי אקלים, גם המשרד להגנת הסביבה הישראלי שם דגש על מומחים במדעי כדור הארץ, הטבע והחקלאות. במחקר זה אנו מציעים גישה איכותנית כאמצעי נוסף העשוי לעזור בקבלת ההחלטות. מטרת המחקר המוצג במאמר זה היתה לבחון את "מסגרות ההבנה" של שלושה עשר מומחים ישראלים בתחום המים באשר לשינוי האקלים בישראל. הרקע המושגי והתיאורטי למחקר מבוסס על "מסגרות הבנה" – מתודולוגיה איכותנית אשר במקרה זה משמשת לבחינת ההיערכות לשינוי אקלים. "מסגרות הבנה" הם מסגרים קוגניטיביים המבליטים גישות שונות לנושאים נתונים. הגישה האיכותנית במחקר זה מבוססת על ראיונות שכללו שאלות פתוחות למומחים בתחום המים. ממצאי המחקר הראו שבכלל מסגרות ההבנה שאותרו, קבוצת הנחקרים איננה מדרגת את שינוי האקלים במקום גבוה ביחס לסל הבעיות הפוקדות את משק המים הישראלי. לראייתם, משבר המים שפוקד את ישראל חמור ומאפיל על משבר האקלים.

32. קידר, א., קליאוט, נ. ופז, ש. (2010). שינוי אקלים ומשק המים בישראל: נקודת המבט של בעלי עניין מומחים. אקולוגיה וסביבה 11(1). עמ' 23-29.

קטגוריה: מדיניות ציבורית (מים). [קישור](#)

בעשור האחרון התרחב בעולם הדיון המדעי הנוגע לשינוי אקלים גלובליים והשפעותיהם על מערכות החיים והחברה [1]. גם בישראל התרחב השיח המדעי הנוגע להשפעות שינוי האקלים בתחומים שונים כגון התחממות [8], משקעים [10], עליית מפלס פני הים [5] ועוד. ההשפעות הסביבתיות של שינוי האקלים העלו על סדר היום של הממשלה את הדיון על ההיערכות הנחוצה כדי להתמודד עם התופעה בישראל [2]. המקור לא מתאים - מדובר על מסמך שהוגש לכנסת. אולי [3] אין עוררין על תפקידם החשוב של מדעי הטבע בחקר התופעה של שינוי האקלים ומרכיביה השונים, אך גם למדעי החברה תפקיד חשוב: אלה עשויים להוות גשר להעברת המידע המצוי בקרב המומחים לציבור הרחב ולמקבלי ההחלטות [14]. המאמר הנוכחי משתמש בשיטות מחקר הנהוגות במדעי החברה כדי להציג דעות ועמדות של בעלי עניין, מומחים בתחומי האקלים, המים, ובתחומים המשיקים להם, בנוגע למשק המים הישראלי, בתרחיש של שינוי אקלים.

33. קליין, מ. (2019). האקלים בישראל בתקופת הקרח הקטנה. *אופקים בגיאוגרפיה*, 96. עמ' 259-269.

קטגוריה: גיאוגרפיה היסטורית. קישור

תקופת הקרח הקטנה (בין השנים 1500 ל-1750) השאירה רישום חזק בהיסטוריה של אירופה, לעומת זאת, דל התייעוד של השפעותיה באזור ארץ ישראל. מאמר זה מביא תיאור של נוסע בארץ ישראל לפני כ-300 שנה, המציג תנאי אקלים שונים מהאקלים של ימינו. העדות הזאת מצביעה על כך ש"תקופת הקרח הקטנה", השאירה את רישומה גם בארץ ישראל. עדות זו מצטרפת לבנק מידע גדל על השפעות תקופת הקרח הקטנה באגן הים התיכון.

34. קנט, ר. ושווק, מ. (2019). השלכות שינוי האקלים על מערכות אקולוגיות בישראל ודרכי היערכות לקראתן. *אקולוגיה וסביבה*, 10(4).

קטגוריה: מדינות ציבורית. קישור

שינוי האקלים צפוי להשפיע על כלל המערכות האקולוגיות בישראל ובעולם, והשפעתו צפויה להשתנות בין המערכות האקולוגיות. על אף תשומת הלב הציבורית הרבה שהנושא מקבל בעיתונות הפופולרית, ישנו מספר קטן יחסית של מאמרים שפרסמו מסקנות משמעותיות. ישראל נמצאת בתחתית המדינות המפותחות במספר המאמרים הבודדים את השפעת שינוי האקלים על מערכות אקולוגיות. עם זאת, קיימים דיווחים על השפעות דיפרנציאליות, לדוגמה על חברות הצומח העשבוני והמעוצה לאורך המפל האקלימי בישראל, וכן לגבי שינויים בגודלי אוכלוסיות של מינים ימיים. השפעות חזויות נוספות כוללות הרחבת אזור החיץ המדברי בעקבות מדבור, פגיעה בשוניות והגברת החדירה של מינים פולשים. רשויות המדינה שאחראיות על ההיערכות לקראת שינוי אקלים מכינות תוכניות שיש בהן צעדים כלליים, כגון הרחבת שמורות טבע ושיקום נתיבי מים מתוקים, וכן מספר פעולות מקומיות, כגון הצללת שוניות האלמוגים באילת כדי להקטין את ההשפעות הצפויות או יצירת מסדרונות אקולוגיים שיאפשרו למינים תנועה רציפה לאזורי מחיה חדשים לנוכח הסטת תנאי הסביבה צפונה ולרום גבוה יותר. פער הידע הקיים, הכולל השפעות ספציפיות, ובעיקר מעבר בין הסקאלה המקומית ללאומית, חייב לקבל תשומת לב מוגברת במחקרים בשנים הקרובות כדי לאפשר היערכות וממשק מבוססי ידע לעתיד. פער משמעותי נוסף כולל את הערכת ההשפעה של שינוי האקלים על שירותי המערכות האקולוגיות. מלבד מחקרים בודדים, שבחנו את השפעת האקלים על שירותי האבקה, לא נבחנו השפעה על שירותי מערכות אקולוגיות אחרים. לשירותי המערכת האקולוגית ישנה השפעה ישירה על רווחת האדם, ולכן יש צורך לפעול כדי לצמצם את פערי הידע הללו.

35. קניגסברג, ג. (2019). לשלם היום או להפסיד מחר? הזווית הארגונית של שינוי האקלים. *אקולוגיה וסביבה*, 10(4).

קטגוריה: סוציולוגיה. קישור

36. קרוזני א. (2019). שילוב והרחבה של היער הקיים בתכנון המרחבי ככלים להסתגלות המשק בישראל לשינוי האקלים. *אקולוגיה וסביבה*, 10(4).

קטגוריה: גיאוגרפיה. קישור

37. רביב, ת. וזס"ק, א. (2019). היערכות מדינת ישראל לשינוי האקלים. *אקולוגיה וסביבה*, 10(4).

קטגוריה: מדיניות ציבורית. קישור

38. רבינוביץ', ד. (2008). משבר האקלים ומבוכת מדעי החברה. *תיאוריה וביקורת*, 33. עמ' 216-225.

קטגוריה: סוציולוגיה. קישור

39. רבינוביץ', ד. (2009). הנה זה בא: כיצד נשרוד את שינוי האקלים. תל-אביב: הקיבוץ המאוחד.

קטגוריה: סוציולוגיה

"השאלה העומדת על הפרק כיום", כותב פרופ' דני רבינוביץ, "איננה עוד אם כדור הארץ מתחמם, אלא כיצד אנו מתכוננים לעידן החם - והיבש והסוער והמציף - הבא עלינו לרעה". בלשון בהירה, בסיוע מחקר אקדמי מעמיק, תיעוד עיתונאי מקיף, וניתוח מקורי וחריף, פורש רבינוביץ סיפור מבהיל של משבר אקלים בעיצומו, על מרכיביו החברתיים, הכלכליים והפוליטיים. כיצד ירוויחו מדינות הצפון מההתחממות, וכיצד יקרוסו מדינות הדרום; איך מעכבים תאגידי האנרגיה את הפתרון, ואיך, מנגד, לוחצים תאגידי הביטוח על ההנהגה העולמית ותובעים התייחסות רצינית לאסון שהולך ומתגשם, ועומד לשנות סדרי עולם; איך יסתגלו עשירי העולם למצב אקלימי פוסט-נורמלי - בסיוע חידושים בטכנולוגיה, ברפואה, בהנדסה - ואיך יגוועו עניו. בתווד, שופך רבינוביץ אור על חלקה של ישראל במשבר ובהתמודדות עמו, ועוזר לנו להבין כיצד יראו חייו בעתיד הלא רחוק: בין שנמשיך בדפוסים של התעלמות, בזבוז והרס, שיביאו לקריסת כל המערכות התומכות בחייו, ובין שנבחר לאמץ דפוסים אחראיים של תחבורה, שימוש במים, ייצור וצריכה, כדי לשמור על משאבי כדור הארץ ולהגן על האטמוספירה לפני שיהיה מאוחר. "האם ההתמודדות עם האתגר הזה, שהוא מורכב ומאיים מכל מבחן אחר שעמו התמודדה האנושות, תתנהל כמהלך בינלאומי מתואם? האם היא תיעשה באופן סולידרי, או שמא רק יילכו ויעמיקו הפערים בין מי שסיכויי ההישרדות שלהם גבוהים לבין אלה שעומדים לשלם את מלוא המחיר? האם האנושות צועדת לסיבוב נוסף, מבעית מכל קודמיו, של הישרדות מול הכחדה, שבו אוכלוסיות פגיעות יהיו קורבן להתחזקות החזקים? או, כפי שרבים מקווים, עדיין אפשר בפיכחון, בעזרת מנהיגות אמיצה ואחריות אזרחית שפויה, לעבור את המכשול בהצלחה?".

40. רוטשילד, א. וחביב, א. (2019). נטיעת עצים למיתון שינוי האקלים? לא הפתרון עבור ישראל. אקולוגיה וסביבה 10(4).

קטגוריה: מדיניות ציבורית. קישור

41. שור, ד. שפר-מוסנזון, מ. ואלנבלום, ר. (2020). היסטוריה סביבתית: הערות על התחום ועל הגיליון. זמנים: רבעון להיסטוריה, 142, עמ' 13-4.

קטגוריה: היסטוריה. קישור

מהי היסטוריה סביבתית? לפי הגדרה בסיסית רחבה, היסטוריה סביבתית היא חקר האינטראקציות של בני אדם עם שאר העולם על פני ציר הזמן. מחקרים רבים בתחום מתמקדים בקשרי הגומלין שבין הסביבה הפיזית ובין ההיסטוריה האנושית, ומבקשים לכתוב את ההיסטוריה בתוך הקשר רחב יותר ממה שהיה נהוג, מתוך הכרה בכך שההיסטוריה בתוך הקשר רחב יותר ממה שהיה נהוג, מתוך הכרה בכך שההיסטוריה האנושית היא חלק מסיפור גדול יותר שבו בני האדם אינם הדמויות היחידות. מחקרים אחרים מתמקדים ברעיונות ומופעים תרבותיים המתרחשים לסביבה ולטבע. אך לא כולם יסכימו עם ההגדרה הרחבה שהוצעה כאן, שלפיה כל מחקר היסטורי העוסק בקשרים שבין בני האדם לסביבה הוא "היסטוריה סביבתית". יש הטוענים שההיסטוריה סביבתית "אמיתית" היא תחום השנוי על שיטת מחקר מיוחדת - סביבתית. לפי גישה זו, לא כל מחקר היסטורי העוסק בסביבה ייחשב היסטוריה סביבתית; רק מחקרים המשקפים חשיבה סביבתית - ואולי אפילו סביבתנית (כלומר, כזאת הדוגלת בערך של הסביבה וההגנה עליה) - ראויים להיקרא היסטוריה סביבתית. ההגדרות המקבילות להיסטוריה סביבתית הן תוצאה וגם סימן להיות התחום צעיר יחסית. מאז שנות ה-80 של המאה העשרים כבר זכה התחום להכרה בעולם ולמיסוד בדמות מינויים באקדמיה, אגודות מקצועיות, כנסים וכתבי עת. אך עדיין אין בנמצא קונצנזוס על גבולות התחום.

42. שמאי, ר., גור, ר. וזס"ק, א. (2019). אסטרטגיה להיערכות לשינוי האקלים - איך קובעים סדרי עדיפויות לפעילויות הממשלה? אקולוגיה וסביבה, 10(4).

קטגוריה: מדיניות ציבורית. קישור

43. שמיר צמח, ש. (2019). הנזק הכלכלי של משבר האקלים. אקולוגיה וסביבה 10(4).

קטגוריה: כלכלה. קישור

משבר האקלים ועליית הטמפרטורה הממוצעת העולמית במחצית המאה האחרונה גורמים לאירועי מזג אוויר קיצוני תכופים יותר וחמורים יותר כמעט בכל מקום בעולם. עיקר הספרות האקדמית על אודות כלכלת שינוי האקלים עוסקת בשיטות של אפחות משבר האקלים והסתגלות אליו, יחד עם המלצות לכלי מדיניות כמו מס על פחמן או סבסוד מעבר לאנרגיות מתחדשות. כדי לתמוך בתהליכי קביעת מדיניות יש חשיבות גם לאמידת הנזקים הצפויים מאירועים אלה והשפעתם הכלכלית. הערכת הנזקים תאפשר למקבלי החלטות לקבוע סדרי עדיפויות לטיפול ברמה המקומית, הלאומית והעולמית. מאמר סקירה זה בוחן מספר שאלות: כיצד ניתן להתייחס לשינוי האקלים במונחים כלכליים? מה השפעות משבר האקלים ברמה המקרו-כלכלית והאם שינוי האקלים פוגע בצמיחה במשקים שונים? כיצד ישתנה המשק הלאומי בעקבות משבר האקלים ומהי השפעתו על מגזרים ספציפיים? כיצד ניתן לאמוד השפעה זו? ולבסוף, מהם כלי המדיניות האפשריים? המאמר מציג הערכות רבות שבוצעו בארה"ב ובאירופה, ועולה מהן כי ההשפעות העיקריות של המשבר הן על מערכת הבריאות, על התשתיות פיזיות ועל החקלאות. בישראל בוצעו מעט מחקרים העוסקים בערכים המוניטריים של משבר האקלים, והם התמקדו בחקלאות ובהשפעת עליית מפלס הים. במאמר זה אני ממליצה לבצע הערכה כלכלית של השפעות שינוי האקלים בישראל, למשל על ענפי התיירות, התשתיות הלאומיות ומערכת הבריאות. נוסף על כך, מלבד יישום פעולות הסתגלות ואפחות שינוי האקלים, יש ליישם בישראל כלי מדיניות – כמו מס פחמן, עידוד טכנולוגיות חסכוניות ולא מזהמות, האצת המעבר לאנרגיה מתחדשת ופתרונות מבוססי טבע למיתון השפעות האקלים כדי להפחית את מגמת שינוי.

44. שמש, א. 2019. המעבר למשק דל-פחמן – שעת כושר סביבתית, כלכלית וחברתית לישראל. אקולוגיה וסביבה 10(4).

קטגוריה: מדיניות ציבורית. קישור

התקנות סולריות. המציאות כיום מלמדת כי מי שמתקין לוחות סולריים הם בעיקר בעלי בתים פרטיים או קיבוצים ומושבים, אך אסדרה מתאימה שתעודד גם בתים משותפים להתקין לוחות כאלה ולייצר אנרגיה באופן עצמאי, עשויה לצמצם את תופעת העוני בקרב אוכלוסיות מוחלשות מהפריפריה החברתית והגאוגרפית.

45. שקדי, י. (2019). שינוי האקלים העולמי ושמירת טבע בישראל. אקולוגיה וסביבה 10(4).

קטגוריה: מדיניות ציבורית. קישור

46. שר, ג. ודקט, א. (2020). התפקיד החדש שממלא הציבור בפוליטיקה של האקלים: השפעת הרשתות החברתיות. במה מחקרית 23(1).

קטגוריה: תקשורת. קישור

על רקע ההתערבות הרוסית בבחירות 2016 לנשיאות ארצות הברית התעצם הדיון הציבורי סביב השפעת הרשתות החברתיות על הפוליטיקה. באווירה זו משכה האקטיביסטית הצעירה בנושא האקלים גרטה טונברג תשומת לב עולמית, לאחר שהשבתות למען האקלים בבית הספר שבו למדה התפשטו במהירות דרך הרשתות החברתיות. עם תשעה מיליון עוקבים באינסטגרם בלבד, טונברג ממנפת פלטפורמות של רשתות חברתיות בקריאה לפעולה בנושא שינוי אקלים, ומבליטה בכך את היכולת של הרשתות החברתיות להעצים קולות שאחרת אולי לא היו נשמעים, כמו אלה של בני נוער אקטיביסטיים. על רקע זה מציג המאמר סקירה של המחקר האקדמי על תפקיד הרשתות החברתיות בפוליטיקה, ובמיוחד בשיח הפוליטי העולמי סביב שינוי אקלים. לאחר מכן מעריכים המחברים את מצבה של פוליטיקה הסביבה בישראל, בניסיון להחיל על המקרה הישראלי לקחים ממעורבות הרשתות החברתיות בדיון העולמי על האקלים. בסיום מסכמים המחברים כי לרשתות חברתיות יש פוטנציאל לזעזע את הנורמות הפוליטיות הנוכחיות ולהעלות את רמת הדיון על האקלים בישראל, ככל שימונפו בידי פעילי איכות סביבה ופוליטיקאים העוסקים בתחום.