



The Association of Environmental Justice in Israel (AEJI)  
المنظمة للعدل البيئي العمومية לצדק סביבתי (ע"ר)

AEJI CCS|NS|RS Working Paper no. 2:

## **Migration and Climate Refugees in the Middle East and Mediterranean Region**

August 2018

Editor:  
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## **Acronyms and Abbreviations**

<b>AEJI</b>	Association of Environmental Justice in Israel
<b>CCF</b>	Climate Compatible Future
<b>CCL</b>	Climate Change Leadership
<b>CSOs</b>	Climate Stress Operations
<b>EEA</b>	European Environment Agency
<b>FAO</b>	Food and Agriculture Organization
<b>GHGs</b>	Greenhouse Gas Emissions
<b>IEA</b>	International Energy Agency
<b>ICCI</b>	International Cryosphere Climate Initiative
<b>ICCIC</b>	Israeli Climate Change Information Center
<b>IDMC</b>	Internal Displacement Monitoring Center
<b>IFP-EW</b>	Initiative for Peacebuilding – Early Warning Analysis to Action
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>IISD</b>	International Institution for Sustainable Development
<b>MEMAs</b>	Middle Eastern-Mediterranean Alliances
<b>MFA</b>	Israel Ministry of Foreign Affairs
<b>MoEP</b>	Ministry of Environmental Protection
<b>MRF</b>	Mary Robinson Foundation
<b>OECD</b>	Organization for Economic Cooperation and Development
<b>UNEP</b>	United Nations Environment Programme
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>UNGA</b>	United Nations General Assembly
<b>UNHCR</b>	United Nations High Commission for Refugees
<b>U.S. DoD</b>	United States Department of Defense
<b>WFP</b>	World Food Programme
<b>WGBU</b>	German Advisory Council on Global Change
<b>WHO</b>	World Health Organization
<b>WMO</b>	World Meteorological Organization

## Preface

*This working-paper is part of Association of Environmental Justice in Israel (AEJI) policy-research on climate change in regional scale, aims to develop discourse on climate migration on public arena, and to provide analysis as a base for policy making assessments of "Climate Change and Security" in Israel and the Middle East in order that social and human rights considerations will be integral part of policy making process on national, regional and international levels.*

*The multi-linkages that are between climate change and national security, and between cross-borders environment and human rights are all analyzed and discussed vis-à-vis the current geopolitical landscape and associated transboundary challenges in the East Mediterranean region. The 1<sup>st</sup> report titled "**Mitigation of Climate Risk and Adaptation to Climate Security in Israel and the Middle East: Policy Measures toward Geopolitical Cooperation and Regional Transformation**" was published last year framing the full spectrum of actual climate security threats and challenges. The study employs the Intergovernmental Panel on Climate Change (IPCC) framework of "Climate Mitigation and Adaptation" to assess prospects for climate-security in the region. The paper is based on preliminary findings correlate Israel's potential role in climate-security politics to positive economic benefits. To our view, Climate Change Leadership (CCL) offers an alternative pathway for regional cooperation and geopolitical stability through the advance of Middle Eastern-Mediterranean Alliances (MEMA's). Furthermore, we propose this vision aligns to a core strategic national masterplan - Leveraging for Geopolitical Cooperation and Regional Transformation – designed to strengthen Israel's national commitment towards a Climate Compatible Future (CCF). In order to achieve this future, Israel with the neighboring countries and the Mediterranean climate community must to focusing on migratory pressures and climate refugees, to advance geopolitical cooperation and regional transformation in order to be able to challenges the Climate Migration.*

*The working-paper raises the key topics in five sections. The full research of AEJI on migration and climate refugees in the Middle East and Eastern Mediterranean region will be published in the coming year.*

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*Director, AEJI*

*16<sup>th</sup> August, 2018*

## A. Climate change and social security

The context of Human and Social Security<sup>1</sup> under Climate Change functions through “multiple processes operating across space, over time, and at multiple scales (Barnett & Adger 2007). It refers to the condition in which people and communities have the necessary capacity to navigate stresses, which may affect their needs, rights, and values, thus “shielding people from critical and pervasive threats and empowering them to take charge of their lives” (Alkire 2003; Ogata et al. 2003). Recent years have seen climate change repeatedly characterized as a “conflict accelerant” or “threat multiplier,” which jeopardizes human security and poses a substantial risk to stability and sustainability in years to come (IPCC 2007).

The IPCC’s fifth Assessment Report marks the first instance of integrating the human security dimensions of climate change into a formal chapter (Gleditsch et al. 2014). The report extends the traditional framework of security by incorporating economic, cultural, livelihood and migratory dimensions into the climate change discussion (Adger et al. 2014). Climate change signifies a developing cause of “livelihood contraction,” on the basis that it will continue to contract the livelihoods of many people, by way of land losses and declining returns from human used land (Barnett & Adger 2007). Livelihood security connects to personal security and security from violence, which together form the basis for a functioning system of society. Under pressures from scarce resources and limited wellbeing, there is an increased propensity for people to engage in violence as an “alternative livelihood strategy” (Young & Goldman 2015).

Concomitantly, climate change develops as a threat to human security<sup>2</sup> that may heighten the risk of violent conflict, especially in regions prone to instability and already susceptible to outbreaks of war. The IPCC views conflict as exacerbated by specific stress factors:

Vulnerable regions face multiple stresses that affect their exposure and sensitivity as well as their capacity to adapt. These stresses arise from, for example, current climate hazards, poverty and unequal access to resources, food insecurity, trends in economic globalization, conflict, and incidence of diseases such as HIV/AIDS (IPCC 2007).

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<sup>1</sup>[http://www.un.org/humansecurity/sites/www.un.org/humansecurity/files/human\\_security\\_in\\_theory\\_and\\_practice\\_english.pdf](http://www.un.org/humansecurity/sites/www.un.org/humansecurity/files/human_security_in_theory_and_practice_english.pdf)

<sup>2</sup> Human security depends on a system where each rational individual calculates that it is more profitable not to rebel (Gough 2002).

Violent conflict shares links to human insecurity, and vice-versa, while vulnerability to climate change also fits into the insecurity mix (Barnett 2006). As the 2006 Stern Review attested, “Climate-related shocks have sparked violent conflict in the past,” and conflict presents a serious risk to areas such as Central Asia, West Africa, the Nile Basin, and by proxy the Middle East (Stern 2006). Given the wrong set of conditions, the associated socio-economic and political stress of climate change can erode the functioning of communities, the effectiveness of institutions and the stability of societal infrastructures (Barnett & Adger 2007).

Through a meta-analysis examining populations in the post 1950s era, Hsiang et al. substantiate that large deviations from normal precipitation and mild temperatures systematically increase the risk of many types of conflict, often substantially, and that this relationship appears to hold over a variety of temporal and spatial scales (Hsiang et al. 2013). The authors conclude that climatic changes influence conflict through multiple pathways that may differ between contexts; therefore, innovative research to recognize these mechanisms needs to become a “top research priority” (Hsiang et al. 2013). Security analysts in the United States echo this viewpoint through their shared agenda; attempting to synthesize the current state of knowledge and the geopolitical atmosphere in order to account for the geostrategic implications of the political environment, as “climate change policy becomes an increasingly top tier issue in international relations” (Busby 2016).

The IPCC’s 2007 Report notes that poor communities are often limited in their adaptive capacities, with heavy dependency on climate-sensitive resources such as local water and food supplies (Parry et al. 2007). Social conflicts at all scales and levels appear susceptible to the impact of climate change, and multiple dimensions of the climate system have the capacity to influence a range of outcomes (Hsiang et al. 2013). Social cohesion is one determinant of resilience, while several factors determine “entitlements” to economic and social capital, which in turn govern the capacity for society to adapt to climate change (Barnett & Adger 2007). The “architecture” behind entitlements is temporally and spatially complex due a multitude of factors, such as distant atmospheric polluters, regional-scale climatic processes and the dichotomy between up-stream and down-stream water networks (Adger & Kelly 1999).

The consequences of climate change reflect the economic, human and social capital of a nation; shaped by access to resources, information and technology, social cohesion, and the ability and effectiveness of institutions (Barnett & Adger 2007). Climate change impacts present chronic and episodic challenges to state capacity and to the fundamental welfare of populations, at a scale that raises questions of state stability. In turn, the resilience of security units and social institutions plays a key part in offsetting the effects of national dependence on “climate

sensitive natural resources” and in curtailing extant bioregional and geopolitical vulnerabilities (Barnett & Adger 2007).

In response to recognized conflict pressures, the United Nations General Assembly 2009 report identified a series of “conflict minimizers” – Climate mitigation and adaptation, economic development, democratic governance and strong local and national institutions, cooperation, preventive diplomacy and mediation (UNGA 2009). When a government and its policy measures function constructively across society and respective sectors (energy, environment etc.), there is a greater likelihood of meeting the following “strong state” criteria (Kahl 2006):

Effective administrative hierarchies, control of the legitimate use of force, ability to mediate impending conflicts before they turn violent, and more capability to manage environmental degradation and change (See Hauge et al. 2001; Esty 1999; Rose 1976).

Consequently, in a state aligned to strong liberal-democratic values, “both the structural conditions and livelihood factors that increase the risk of violent conflict are reduced” (Barnett & Adger 2007).

Climate security derives its effectiveness from connective capacity, regional interlinks, presence on the ground and anticipatory capabilities. In response to the exacerbation of climate change and the unpredictability of weather patterns, practical infrastructure provision and improvements in adaptive capacity can strengthen human security.

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## **B. Regional Climate Risks**

In the international discourse, climate change exhibits characteristics as “an amplifier of existing social, economic and ecological problematics” (Gillard 2016):

Exacerbating threats caused by persistent poverty, weak institutions in resource management and conflict resolution, fault lines and a history of mistrust between communities and nations and inadequate access to information and resources (UNGA 2009).

In the Middle East, such fault lines remain precarious under a geopolitical landscape sensitive to environmental challenges. According to the International Institution for Sustainable Development (IISD), this mix “impedes greater efficiency, undermines innovative solutions to regional problems and fosters a zero-sum approach to sharing scarce resources” (Brown & Crawford 2009). The legacy of conflict in the Middle East, coupled to the lack of cooperation and

underlying distrust between nations and common internal conflicts, multiplies the challenges of climate change considerably. Security is a constant concern in the Middle East, as evidenced by ongoing events in Syria. Given this atmosphere, it is probable that several dimensions of climate change will strongly influence future progress and development in the region.

The pervasive risk factors associated to climate change are liable to interact hazardously with the ecological and social systems of Israel, and the Middle East at large (Aytzim 2017). While Israel's geopolitical entanglement is distinctive, Israel's ecology and climate are among the most fragile on the planet (Alterman 2015). In the absence of staging substantial policy intervention – *ceteris paribus* – the country could be set to face insurmountable levels of destabilization. Risk factors orientate around the sensitivity of resources like freshwater, reefs, fisheries and soils to heightened climate variance, which in turn affects the extent to which people rely upon natural resources to meet their daily needs (Wentz 2016). The impact of this relationship influences the responsive capacity of social systems, as individuals adapt to resource fluctuations (IPCC 2017).

The challenges ahead are potentially overwhelming, and include “disruption of agriculture, low lying areas flooded by rising seas, higher risk of conflict over resources, increased refuge flows<sup>3</sup>, and all the security threats that follow (Brown & Crawford). Once the adverse impacts of climate change coalesce with existing divisions within Israeli society and the Middle East at large, there is increased likelihood for security disruptions and livelihood contractions, in addition to further geopolitical instability.

Over time and across biomes, climate change increases the propensity for severe, pervasive and irreversible impacts for populations and ecosystems. **Global warming threatens the long-term conditions for cooperative solutions in the Middle East.** Warming is set to increase the likelihood and intensity of droughts in the region, in turn reducing the conditions to facilitate peace and security. Climate change looms large over the Middle East and threatens to “redraw the maps of water availability, food security, disease prevalence, population distribution and coastal boundaries,” which will compound the already extensive security challenges facing the region (IPCC 2007; Brown & Crawford).

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<sup>3</sup> both in the Levant and in Egypt

### **C. Climate pressures – The case of Israel in regional prism**

Israel faces distinct pressures from climatic effects projected to affect the Mediterranean Basin and the Middle East. In the last few decades, anthropogenic climate change has significantly impacted the Middle East: Since 1950 there has been an increase in aggregate temperatures, a decrease in the number of cold days, and an increase in the amount of warm days (Zhang et al. 2005). In the future, the southern part of the eastern Mediterranean and the Middle East may be exposed to 2–3 months more combined tropical nights and hot days, while the northern part could experience increased heat wave amplitudes ranging from 6-10 degrees Celsius (Zittis et al. 2016).

Regional climate change models for the Eastern Mediterranean also predict a further increase in the frequency and duration of severe droughts. The observed wintertime Mediterranean drying over the last century corresponds to “the region’s sensitivity to a uniform global ocean warming and to modest changes in the ocean’s zonal and meridional sea surface temperature (SST) gradients” (Weinthal et al. 2015; Hoerling et al. 2012). Consequently, the IPCC has identified the Mediterranean region as a climate change “hot spot,” with most countries of the Eastern Mediterranean already experiencing temperature rises; accompanied by growing rates of desertification, increases in freshwater scarcity, forest fires, and increasing drought frequency (Solomon 2007; Loizidou et al. 2016; Hoerling et al. 2012).

Based on IPCC models, the warming trends of recent years are set to continue. Average temperatures in Israel are set to rise a further 1.5 °C within the next few years; reaching 5°C towards the end of the century compared to 1960-1990 levels (MoEP 2010). The largest form of climate change, however, corresponds to a decrease in precipitation in the Eastern Mediterranean and the Middle East caused by a decrease in storm track activity over the Eastern Mediterranean (Evans 2009). While precipitation is predicted to decrease by 20% by 2050, sea level rise in the Mediterranean is estimated to hit one meter by 2100, following 0.5 meters by 2050 (Evans 2009; MoEP 2010).

Reports from the Israeli Climate Change Information Center<sup>4</sup> indicate that rising sea levels could lead to flooding in Tel Aviv as far east as Ibn Gvirol Street<sup>5</sup> (ICCIC 2012). Similarly, the frequency and length of extreme weather events, such as exceedingly wet or dry years has increased and related events like droughts, heat waves and floods are likely to escalate (Brown

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<sup>4</sup>[http://www.sviva.gov.il/English/env\\_topics/climatechange/Adaptation/Pages/ClimateChangeInformationCenter.aspx](http://www.sviva.gov.il/English/env_topics/climatechange/Adaptation/Pages/ClimateChangeInformationCenter.aspx)

<sup>5</sup> Ibn Gvirol is one of the main urban boulevard in central-north Tel Aviv, parallel to Mediterranean sea-shore, less than 1km distance on airline.

& Crawford 2009). Between the years of 2003/2004 to 2010/2011, Israel suffered 7 years of consecutive drought, surviving “the Mediterranean’s worst drought in 900 years,” which was consistent with global trends that have seen the ten warmest years on record all occur since the year 2000 (OECD 2011; NASA 2015). Natural climatic variability cannot account for the increasing frequency of wintertime droughts in the Mediterranean<sup>6</sup> (Hoerling et al. 2012).

In terms of regional hydrology, the combination of higher temperatures and lower levels of precipitation will reduce the flow of rivers and streams. In the Middle East, climate change will bring a stream of negative consequences, especially for agriculture, river flows and the rate at which groundwater aquifers replenish (Brown & Crawford 2009). Furthermore, increased rainstorms, erosion and runoff will affect the natural rates at which aquifers recharge, adding further water stress to the region. Israel’s National Report under the UNFCCC warned that water supply may severely decrease, falling by 60% of 2000 levels by 2100, which has been reinforced by the Ministry of Environment in subsequent reports (Pe’er & Safriel 2000; Gabbay 2001).

The Middle East’s transboundary rivers provide about 60 % of its freshwater supplies, which the World Bank reports as the highest rate of dependence on international basins in the world (Hamdy 2005). To make matters worse, these transboundary rivers have asymmetrical upstream and downstream power relations, which further complicate access to and control over water resources (Lowi 1993). Under conditions of moderate temperature increase, the Euphrates River would carry 30% less water than at present and the end of the century could see the Jordan River shrinking by up to 80% (Brown & Crawford 2009). Additional impacts, such as reduced flows to Lake Kinneret and reduced recharge of groundwater aquifers, are likely to problematize the colossal effects of climate change in Israel and the Middle East (OECD 2013).

In sum, climate change is highly likely to influence Israel’s water resources, while agriculture, biodiversity and public health are extremely vulnerable to changes in climatic conditions (ICCIC 2011). Due to the unequal distribution and scarcity of water in the Middle East, there is an underlying reason for its classification as a long-term security concern linked to climate change. Strategic policy needs to anticipate the widespread and interconnected impacts of climate change, including the threat of multi-decadal mega-drought. As illustrated, these impacts are already visible today and will further intensify in the days to come, with probable damages more severe in the Middle East than in other regions of the world. Policy measures necessitate formulation and implementation sooner rather than later.

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<sup>6</sup> Within the past 20 years, the region experienced 10 of its 12 driest winters since 1902 (Hoerling et al. 2012).

## **D. Migratory Pressures and Climate Refugees**

Since 2010 the impacts of climate change on external migration to Israel has touched the outskirts of national security discussions. The Israeli Climate Change Information Center (ICCIC) explicitly link climate change to the threat of “climate refugees” from Sub-Saharan Africa (ICCIC 2012; Weinthal et al. 2015; See Annex 1b). Such conclusions stem from the recent surge in African migrants and asylum seekers, with 60,000 refugees having crossed into Israel by way of Egypt since 2005 (Human Rights Watch 2014).<sup>7</sup> Drought and desertification across much of the Sahel have undermined agricultural and pastoral livelihoods, adding further pressures to well-established migratory routes between Libya, Nigeria, Niger, Burkina Faso and Mali to the Mediterranean coast, Europe and Israel. (Heinrigs 2010; Werz & Conley 2012; Femia & Werrell 2013).

In the Middle East, the most recent influx of refugees has originated from the ongoing conflict in Syria, with the United Nations High Commissioner on Refugees (UNHCR) listing 620,441 registered Syrian refugees in Jordan alone (WHO 2014). Additionally, large numbers of undocumented refugees from Libya and Yemen also reside in Jordan, adding to the costs of housing and public services, while placing further stress on local resources, which together heightens the level of domestic social conflict (Weinthal et al. 2015; Fagen 2009). According to the UNHCR,<sup>8</sup> migratory pressures and “the adverse effects that climate change may have on natural resources, may spark conflict with other communities, as an increasing number of people compete for a decreasing amount of resources” (UNHCR 2015).

The ICCIC recommends “Israel to take steps to insulate itself from instability, such as strengthening its border barriers and defenses,” in tandem to the proposed building of “sea fences” along the Mediterranean and Red Seas, with added law enforcement along border zones (ICCIC 2013; Udasin 2012; Udasin 2014). These measures can enhance Israel’s geopolitical and economic security, as witnessed through the construction of a border fence across the Israel-Egyptian border that has effectively closed the migratory routes taken by African refugees to enter Israel (Fiske 2013). At the same time, however, the root causes of migration and their interconnections to climate change must go beyond the conventional security agenda and analysis.

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<sup>7</sup> <https://www.hrw.org/world-report/2014>

<sup>8</sup> <http://www.unhcr.org/pages/49e4a5096.html>

## **E. Concluding Remarks**

While the study by AEJI on migration and climate refugees in the Middle East is progressing, it is already possible to point to understandings from an extensive review of policy documents prepared by international strategic bodies and researches in the past three decades, including the IPCC documents. Thorough evaluation is directed at decision-makers according to which part of the government's long-term objectives should include building interregional and intergenerational security and justice in Israel and the Middle East by making climate change a top strategy priority. National security plays out on many fronts, both domestically and internationally, and to be effective policy measures must recognize, anticipate and prepare for the multi-dimensional impacts of climate change.

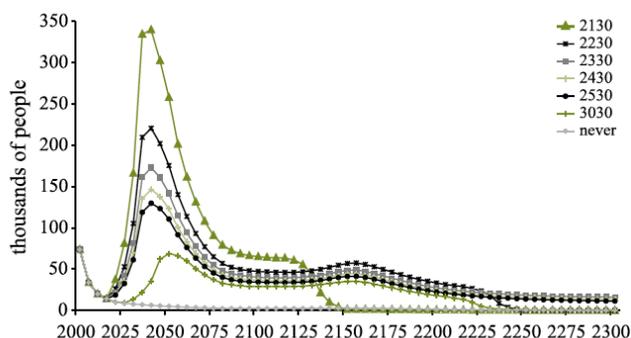
The main insights the research raises pertaining decision making process of climate justice policy in Middle East and Eastern Mediterranean are:

- 1) Climate change can evolve into real opportunity for working towards geopolitical stability, as opposed to surrendering to regional instability, where climate migration is integral part of considerations. Once climate contingency planning starts to solidify, security mechanisms can develop through different avenues to create a more climate-protected society, in which security challenges and climate justice values coalesce.
  - 2) Climate-security hinges upon few key directions, among them are Multi-level governance, New energy pathways and Climate stewardship. We assume that Multi-level governance holds the key for climate risk mitigation and strengthening of climate-security. A new form of diverse governance, equipped with a flexible toolkit to match, can help bridge the knowledge gaps necessary for employing effective security and sound social policies, including in regarding to climate migration.
  - 3) Climate stewardship is one of the first lines of defense against climate change and sets the path towards reaching climate justice in a climate-protected society. Climate stewardship reflects the power of the people, seeking to elevate the responsibility of the individual citizen towards carbon-reduction. Environmental education can facilitate empowerment across local scales, as citizens come to internalize the reality of climate change vis-à-vis their own carbon footprint.
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## Graphs

### **Graph1a: Global Migration Response to Climate Shocks**

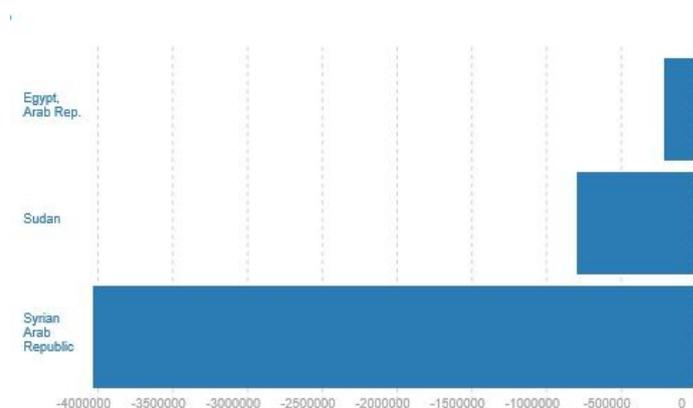
**Global annual forced migration as a function of time and WAIS scenario**



**Source** Nicholls et al. 2008 (WAIS: West Antarctic Ice Sheet collapse)

### **Graph 1b: Net Migration: Egypt, Syria, Sudan (2012)**

Net migration is the net total of migrants during the period, that is, the total number of immigrants less the annual number of emigrants, including both citizens and noncitizens. Data are five-year estimates.

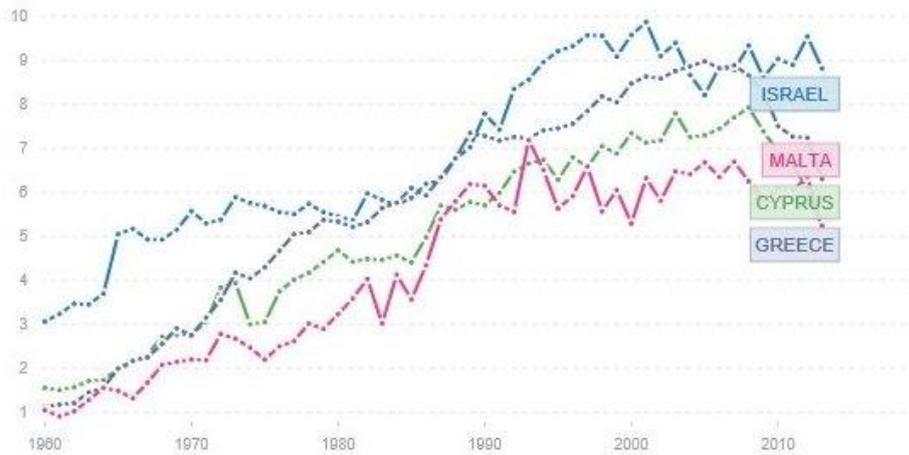


**Source:** United Nations Population Division, World Population Prospects.

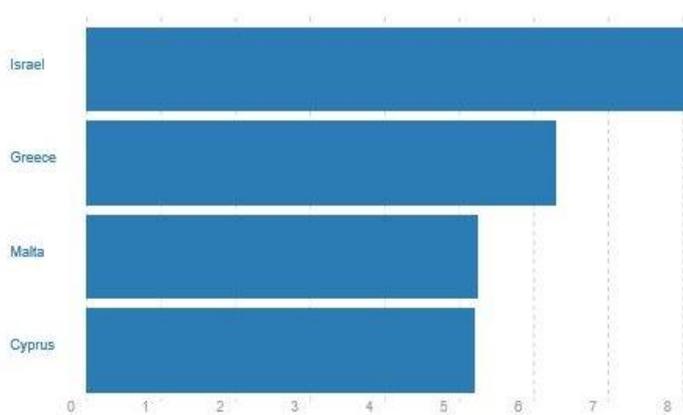
**Graphs 2a**

**Israel, Cyprus Greece and Malta 1960-2013**

CO<sub>2</sub> Emissions (metric tons per capita)



**Israel, Cyprus Greece and Malta: CO<sub>2</sub> Emissions 2013**



**Source:** Carbon Dioxide Information Analysis Center, Environmental Sciences Division, Oak Ridge National Laboratory, Tennessee, United States.

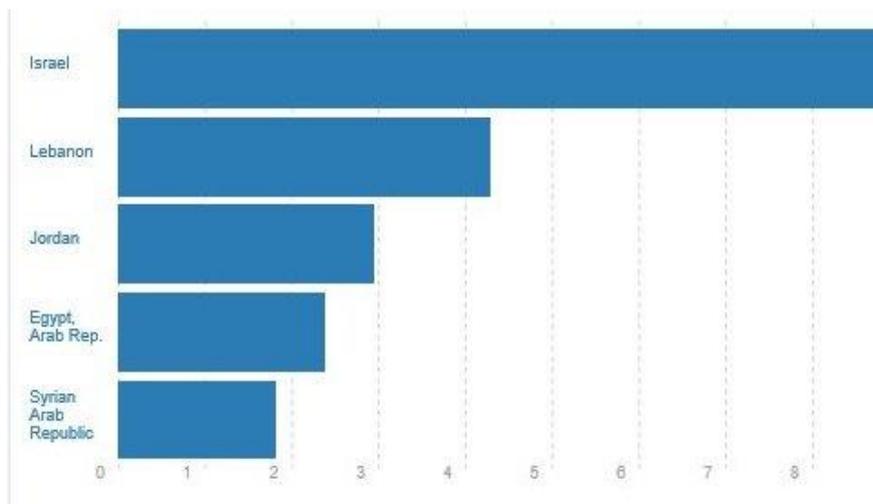
**Graphs 2b**

**Israel, Egypt, Jordan, Lebanon and Syria 1960-2013**

CO<sub>2</sub> Emissions (metric tons per capita)



**Israel, Egypt, Jordan, Lebanon and Syria: CO<sub>2</sub> Emissions 2013**



**Source:** Carbon Dioxide Information Analysis Center, Environmental Sciences Division, Oak Ridge National Laboratory, Tennessee, United States.

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Association of Environmental Justice in Israel (AEJI) is a non-partisan, independent body, set up in 2009 as a Research and Resources Center that focuses on the inter-connectedness of society, environment and the decision-making framework in Israel in order to produce policy recommendations that are real and acceptable while promoting the strengthening of democracy, equality and open governance values.

AEJI works with different stakeholders in the governance, academia, and civic society in Israel, and with the international community to advance sustainable solutions in the field of environmental and social justice, and to create an economic basis for civic engagement among disadvantaged population groups, especially of minorities and residents of the periphery.

AEJI works as well on regional scale, in order to create regional collaborations in the Middle-East and the Mediterranean region, based on the understanding that partnerships will facilitate reducing environmental risks and strengthen economic, social and environmental resilience and regional sustainability for the benefit of all peoples and the environment in the region.

AEJI activities are conducted in 4 main fields:

**A.** Initiating of researches on environmental and climate justice and field, including climate security, resilient communities, climate and environment economies. In frame of research field, we work to create and collect Data Base that attempts to expand research borders of environmental justice and elucidate workable solutions framework for decision makers.

**B.** Development of policy tools that promote a Sustainable Strategy and propose solutions based on the values of democracy, equality and environmental justice. Gender equality is framed by our activities.

**C.** Increasing civic participation on matters of environmental justice and decision-making processes regarding local and regional governance. The emphasis is vulnerable groups, especially Arab minority and residents of the periphery.

**D.** Originating and participates in international initiatives, mainly in the field of Climate & Energy Justice, aimed to create common ground shared with neighboring countries in order to lead mitigation of environment and climate risks and adjustment to climate security for all. We put efforts to establishing sustainable regional collaboration under the geopolitical situation in the Middle East.



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