

Davis, Diana K., and Edmund Burke, eds. *Environmental imaginaries of the Middle East and North Africa*. Athens, OH: Ohio University Press, 2011.

The landscapes of the Middle East have captured our imaginations throughout history. Images of endless golden dunes, camel caravans, isolated desert oases, and rivers lined with palm trees have often framed written and visual representations of the region. Embedded in these portrayals is the common belief that the environment, in most places, has been deforested and desertified by centuries of misuse. It is precisely such orientalist environmental imaginaries, increasingly undermined by contemporary ecological data, that the eleven authors in this volume question. This is the first volume to critically examine culturally constructed views of the environmental history of the Middle East and suggest that they have often benefitted elites at the expense of the ecologies and the peoples of the region. The contributors expose many of the questionable policies and practices born of these environmental imaginaries and related histories that have been utilized in the region since the colonial period. They further reveal how power, in the form of development programs, notions of nationalism, and hydrological maps, for instance, relates to environmental knowledge production.

TOC:

Preface by Edmund Burke III ix

Acknowledgments xiii

Introduction. Imperialism, Orientalism, and the Environment in the Middle East History, Policy, Power, and Practice Diana K. Davis 1 [see full text]

Chapter 1. "A Rebellion of Technology" : Development, Policing, and the British Arabian Imaginary Priya Satia 23

Chapter 2. Restoring Roman Nature : French Identity and North African Environmental History Diana K. Davis 60

Chapter 3. Body of Work : Water and Reimagining the Sahara in the Era of Decolonization George R. Trumbull IV 87

Chapter 4. From the Bottom Up : The Nile, Silt, and Humans in Ottoman Egypt Alan Mikhail 113

Chapter 5. Drafting a Map of Colonial Egypt : The 1902 Aswan Dam, Historical Imagination, and the Production of Agricultural Geography Jennifer L. Derr 136

Chapter 6. Remapping the Nation, Critiquing the State : Environmental Narratives and Desert Land Reclamation in Egypt Jeannie Sowers 158

Chapter 7. Salts, Soils, and (Un)Sustainabilities? Analyzing Narratives of Environmental Change in Southeastern Turkey Leila M. Harris 192

Chapter 8. Hydro-Imaginarities and the Construction of the Political Geography of the Jordan River : The Johnston Mission, 1953–56 Samer Alatout 218

Chapter 9. Environmentalism Deferred : Nationalisms and Israeli/Palestinian Imaginaries Shaul Cohen 246

Afterword Timothy Mitchell 265

Contributors 275

Index 279.

Abbar, Sofiane, Tahar Zanouda, Laure Berti-Equille, and Javier Borge-Holthoefer. *Using Twitter to understand public interest in climate change: The case of Qatar*. 2016.

Climate change has received an extensive attention from public opinion in the last couple of years, after being considered for decades as an exclusive scientific debate. Governments and world-wide organizations such as the United Nations are working more than ever on raising and maintaining public awareness toward this global issue. In the present study, we examine and analyze Climate Change conversations in Qatar's Twittersphere, and sense public awareness towards this global and shared problem in general, and its various related topics in particular. Such topics include but are not limited to politics, economy, disasters, energy and sandstorms. To address this concern, we collect and analyze a large dataset of 109 million tweets posted by 98K distinct users living in Qatar - one of the largest emitters of CO₂ worldwide. We use a taxonomy of climate change topics created as part of the United Nations Pulse project to capture the climate change discourse in more than 36K tweets. We also examine which topics people refer to when they discuss climate change, and perform different analysis to understand the temporal dynamics of

public interest toward these topics.

Adel M Al-Taweel, V. Ismet Ugursal and Donnie Boodlal. "Sustainable management of climate change: the case of the Middle East and North Africa." *Renewable Energy & Sustainable Development* 1, no. 1 (2015): 146–59.

Climate change is one of the major environmental challenges facing the world. Particularly vulnerable are arid and low-lying coastal areas, conditions that prevail through most of the Middle East and North Africa [MENA]. This region is an economically diverse one, including both the oil-rich economies in the Gulf and countries that are resource-scarce in relation to their population. However, with about 23 percent of MENA's population living on less than \$2 a day, it is imperative that the climate change management strategies adopted be cost-effective and emphasize economic, social and human development while addressing the concerns arising from anthropogenic climate change. Over the past decades several national and international mechanisms were developed in an attempt to reduce the emissions considered to be mainly responsible for climate change, and to assist in coping with the adverse effects that are beginning to occur as a result of climate change. Unfortunately, many of these approaches are presently associated with economic penalties that often adversely affect the socio-economic welfare of the populace, particularly in low-, and medium-income countries. In this regard, it is informative to note the experience recently gained by Trinidad and Tobago [T&T] in its attempt to reduce GHG emissions without affecting the competitiveness of the industrial and agricultural sectors. Using appropriate decision making tools and a policy environment based on a combination of regulations and incentives, the environmental challenges can be turned into a vehicle for sustainable development. This paper discusses the factors that need to be considered while developing a sustainable climate change management approach for the MENA region and develops some recommendations that may be essential for achieving the desired climate change mitigation/adaptation actions while minimizing social disruption.

Adger, W. Neil, Tor A. Benjaminsen, Katrina Brown, and Hanne Svarstad. "Advancing a political ecology of global environmental discourses." *Development and Change* 32, no. 4 (2001): 681–715.

In the past decade international and national environmental policy and action have been dominated by issues generally defined as global environmental problems.

In this article, we identify the major discourses associated with four global environmental issues: deforestation, desertification, biodiversity use and climate change. These discourses are analysed in terms of their messages, narrative structures and policy prescriptions. We find striking parallels in the nature and structure of the discourses and in their illegibility at the local scale. In each of the four areas there is a global environmental management discourse representing a technocentric worldview by which blueprints based on external policy interventions can solve global environmental dilemmas. Each issue also has a contrasting populist discourse that portrays local actors as victims of external interventions bringing about degradation and exploitation. The managerial discourses dominate in all four issues, but important inputs are also supplied to political decisions from populist discourses. There are, in addition, heterodox ideas and denial claims in each of these areas, to a greater or lesser extent, in which the existence or severity of the environmental problem are questioned. We present evidence from location-specific research which does not fit easily with the dominant managerialist nor with the populist discourses. The research shows that policy-making institutions are distanced from the resource users and that local scale environmental management moves with a distinct dynamic and experiences alternative manifestations of environmental change and livelihood imperatives.

Adger, W. Neil, Suraje Dessai, Marisa Goulden, Mike Hulme, Irene Lorenzoni, Donald R. Nelson, Lars Otto Naess, Johanna Wolf, and Anita Wreford. "Are there social limits to adaptation to climate change?" *Climatic Change* 93, no. 3-4 (2009): 335–54.

While there is a recognised need to adapt to changing climatic conditions, there is an emerging discourse of limits to such adaptation. Limits are traditionally analysed as a set of immutable thresholds in biological, economic or technological parameters. This paper contends that limits to adaptation are endogenous to society and hence contingent on ethics, knowledge, attitudes to risk and culture. We review insights from history, sociology and psychology of risk, economics and political science to develop four propositions concerning limits to adaptation. First, any limits to adaptation depend on the ultimate goals of adaptation underpinned by diverse values. Second, adaptation need not be limited by uncertainty around future foresight of risk. Third, social and individual factors limit adaptation action. Fourth, systematic undervaluation of loss of places and culture disguises real, experienced but subjective limits to adaptation. We conclude that these issues of values and ethics, risk, knowledge and culture construct societal limits to adaptation, but that these limits are mutable.

Al Shamali, Abdallah, Bandaly El-Issa, Esra Elmaddah, Ikram Hamdi Mansour, Intissar Rouabhia, Khaled Al Thobhani, Nisreen El Saim, Sabrina Fawaz, Sarah Al Harthey, Shahd Abu Serriya, and Sonia Al-Zoghoul. *Energy & climate in the MENA region: youth perspective to a sustainable future*. Amman: Friedrich Ebert Stiftung Jordan & Iraq; Germanwatch; Change and Energy Project, 2019.

Rising sea levels and more frequent dangerous weather events are among the immediate impacts of climate change already felt across the world. Sadly, these will only become more severe as global average temperature rises. The Middle East/North Africa (MENA) region is the area of the world where climate impacts are most severe. Limiting global warming and reducing greenhouse gas (GHG) emissions, a priority for the majority of states worldwide, requires that almost all facets of our daily life must be restructured: water, food, buildings, transportation, global trade, etc.

The energy sector is the largest source of global GHG emissions, which cause temperatures to rise and climate change to worsen. In these circumstances, renewable energy (RE) is emerging as an alternative to traditional fossil fuels, with these sorts of technologies rapidly improving and becoming more affordable. Thus, the promotion of RE and energy efficiency (EE) is a crucial aspect of the international climate debate and many countries' national energy policies.

The MENA region is blessed with the huge natural potential for solar and wind energy. Furthermore, this region has another important resource: a young population. To achieve a successful, fair, and complete energy transition, countries need agents of change. These agents should be innovative, globally minded, and motivated to work for the future of their country, world, and themselves. Who else but the youth could better assume the mantle of these champions for transformation? Moreover, a project gathering people from the entire region could enhance energy cooperation and dialogue between MENA countries.

Through a joint effort, the Friedrich-Ebert-Stiftung (FES) and Germanwatch decided to encourage and empower young people from the MENA region to engage in climate and energy policy issues. Thanks to several training programs, young participants from 10 countries (Morocco, Algeria, Tunisia, Egypt, Sudan, Lebanon, Palestine, Jordan, Saudi Arabia and Yemen) were able to learn about energy issues and develop a common policy paper on their visions for their region's energy future. This paper is not only an opportunity for its young authors to present their views, but also a chance for decision makers to learn firsthand about the energy future their young citizens envision for the region.

Al-Maamary, Hilal M.S., Hussein A. Kazem, and Miqdam T. Chaichan. "Climate change: The game changer in the Gulf Cooperation Council Region." *Renewable and Sustainable Energy Reviews* 76 (2017): 555–76.

The GCC experience is the only successful Arab experience at the level of regional cooperation in the Arab region. This success can only be enshrined by the Council's ability to continue. Also, these countries succeeded in promoting a rapprochement between their States and the Arab region and its surroundings. The three wars in the area posed significant challenges to the Gulf Cooperation Council. Arabian Gulf authorities have sensed the need to develop a strategic partnership focus on the defense and the sustainability of the GCC countries, and their well-being. Climate change has sparked a war; all the wealth and luxury enjoyed by the people of the Gulf States will be affected by climate change. The impact of climate change appears in many forms, including an increase in the average ambient temperature in the region with severe decrease in precipitation. The area climate is rapidly changing because of human activities from year to year and decade to decade. The Arabian Gulf region is interested in climate change on several levels, and there is a growing awareness in the area. The potential for climate change is affecting many sectors and systems, like distilled water processing, food security, renewable energies and public health. This paper will discuss these issues in this paper. The information presented in this article aims to give a review and discussion of the effect of climate change in the GCC to the researchers; decision makers, politicians, and engineers.

Al-Rawashdeh, Rami, Aiman Q Jaradat, and Mohammad Al-Shboul. "Air pollution and economic growth in MENA countries: testing EKC hypothesis." *Environmental Research, Engineering and Management | Aplinkos tyrimai, inžinerija ir vadyba* 70, no. 4 (2014): 54–65.

The Environmental Kuznets Curve (EKC) hypothesis is one of the models describing the relationship between economic growth and environmental quality. The purpose of this study is to investigate the relationship between economic growth and the two environmental indicators (SO₂ emissions, CO₂ emissions) in 22 Middle East and North Africa (MENA) countries. Based on a country level analysis and by using time series data, the study revealed that there is an evidence for SO₂- EKC for Algeria, Tunisia, Yemen, Morocco, Turkey and Libya. Our findings for CO₂ emissions also support an inverted U-shape pattern associated with the EKC hypothesis for Tunisia, Morocco, Turkey and Jordan. The results also showed that MENA region as a

whole did not show EKC for SO₂ emissions and CO₂ emissions. Stricter policy measures and higher demands for the adoption of best environmental practices are required in order to generate an inverted U shaped curve relationship between GDP per capita and environmental degradation.

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Alatout, Samer. "Hydro-imaginaries and the construction of the political geography of the Jordan River: The Johnston Mission, 1953-56," In *Environmental imaginaries of the Middle East and North Africa*, edited by Diana K. Davis, and Edmund Burke, 218–45. Athens, OH: Ohio University Press, 2011.

Shortly after the establishment of the state of Israel in 1948, disputes over unilateral plans for utilizing the Jordan River and its tributaries erupted between Israel and the riparian Arab states of Jordan, Lebanon, and Syria. Conflict became especially intense between Syria and Israel when the latter began construction on its drainage project on Lake Huleh in 1950 and, more so, when Israel began its construction of the National Water Carrier in the demilitarized zone in 1953. Compounding these problems was the seemingly explosive situation of more than 800,000 Palestinians who became refugees as a result of the 1948 war and who settled, for the most part, along the Jordan River banks. Interventions on their behalf for repatriation to their homes in Palestine were rejected by the Israeli state. In addition, their permanent resettlement in the Arab states where they took refuge was resisted by the refugees themselves and their political organizations, fearing the dissolution of their political rights of return. Both of these problems became especially critical in the early 1950s. In response, then U.S. President Dwight Eisenhower dispatched his personal envoy, Eric Johnston, to the Middle East to negotiate a water development plan among the Jordan River riparian states. With such a plan, the U.S. administration wanted to address three issues at once: conflict over the water resources by promoting a regional approach to water management, the Palestinian refugee problem by encouraging the settlement of Palestinian refugees in host countries, and underdevelopment by providing a regional development plan funded by the United States and other members of the international community. In order to negotiate such an agreement, Johnston visited the area four times between 1953 and 1955. The context of this episode of international diplomacy, the actors behind it, its politico-environmental imaginaries, assumptions, and representations, the debates that surrounded it, and its conclusion constitute the story of this essay.¹ In a nutshell, Johnston and his team constructed the water resources of the region as a self-evident, unified watershed and used that conception to underwrite the political project of building a cooperative region. Articulating the watershed with the region in such a

way, Johnston did not only naturalize and thus legitimize the emergence of cooperative regional politics; he also naturalized the very politics of containment toward the Soviet Union, at the heart of American diplomacy during the 1950s. This politico-environmental imaginary based on the conflation of a watershed (nature) and a region (politics) was met by resistance, or counterimaginaries, in both the Arab states and Israel. Not only was the regional politics of Johnston disputed, but also his very understanding of regional water resources. Upon arrival, Johnston faced two different politico-environmental imaginaries that rested on two different conceptions of the hydrology of the water resources in the area, overlapping with two drastically different political imaginaries. One of those was the Arab Technical Committee's articulation of the Jordan River with the primordial nation and its territorial expression and the other was an Israeli imaginary that situated the Jordan River within the narrow confines of the nation-state. These three different politico-environmental imaginaries of the river and its management proved incommensurable. Hence, it only makes sense that the final agreement was not formally ratified. However, despite that, the argument of this essay, consistent with much scholarship on the subject, is that the final revised Johnston agreement, which resulted from three years of negotiation, was not a total failure either. As a matter of fact, the revised agreement became the *de facto* framework followed by all states in the region until the war of 1967. The revised plan was instrumental in de-politicizing the Palestinian question and in defining the Palestine refugee issue in economic and humanitarian terms. This particular outcome was immensely important for all of the states in the region, most particularly Israel and Jordan.³ The argument of this essay rests on two decades of scholarship in science studies that emphasize the co-production of science and politics.⁴ Along those lines, particular understandings of the natural order (e.g., how scientists define the watershed, what constitutes evidence in the production of knowledge, what are the facts about water resources, and what interventions are deemed necessary) often overlap with particular understandings of the political order (e.g., what political units are appropriate for the management of water resources and what scale is appropriate for political intervention). In the case of the Johnston mission, we had three competing politico-environmental imaginaries that respectively linked a watershed approach with a political region (the original Johnston plan), differentiated water resources with a primordial nation (Arab plan), and a river with the nation-state (the Israeli plan).⁵ In what follows, I discuss all three plans (Johnston, Arab, and Israeli) with special attention to the ways each of these plans conceptualized the water resources and articulated that conceptualization with a particular political vision. I conclude by bringing the themes of the chapter together and by briefly describing current water-sharing regimes, or lack thereof.

Ali, Saleem H. "Reconciling Islamic ethics, fossil fuel dependence, and climate change in the Middle East." *Review of Middle East Studies* 50, no. 2 (2016): 172–78.

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.

AlMarashi, Habiba, and Jasleen Bhinder. "From the tallest to the greenest: Paradigm shift in Dubai." *CTBUH 2008, 8th World Congress - Tall and Green: Typology for a Sustainable Urban Future, Congress Proceedings* (2008): 76–83.

The construction boom in the Middle East can mainly be attributed to the rise in oil prices. This has resulted in some of the most challenging projects undertaken in the region. The Palm Jumeriah, The World, Burj Al Arab Hotel, and Emirates Towers are some of the construction marvels in Dubai. Still under construction - Burj Dubai is now the tallest building in the world. However, the construction industry is known as one of the most polluting industries and, hence has raised grave environmental concerns for Dubai. This paper discusses the Urban Challenges facing Dubai due to the construction boom, including the social, economical and environmental impacts of the construction industry, Dubai's Economic Gain due to this boom in the economy, and the efforts undertaken by the government to mandate the construction of green buildings. There are various projects under construction by the private sector for introducing the green revolution to Dubai. Lastly, one of the best case studies of

the first green building in the UAE and the Middle East will be discussed at length. The role of community-based organizations and the conclusions direct us towards the Paradigm shift in Dubai - from the Tallest to the Greenest.

Alnaser, N. W., and W. E. Alnaser. "The impact of the rise of using solar energy in GCC countries." *Renewable Energy and Environmental Sustainability* 4, no. 7 (2019): 1–11.

The research and the prototype projects in the GCC countries were in place since 1970's which first was started in Kuwait, followed by Saudi Arabia in the 1980's, United Arab Emirates in the 1990's, Bahrain, Oman and Qatar in 21 centuries. Now all GCC countries had conducted, relatively, large project in solar and wind energy, especially Kuwait (currently about 70 MW among a plan of 2000 MW by 2030), UAE (currently about 300 MW among a plan of 2500 MW by 2030) and Saudi Arabia (with an ambitious renewable energy target of 3450 MW by 2020 with a further 6000 GW envisioned by 2023 and to 200 000 MW by 2030). Such an acceleration in the use of solar and wind energy would have an impact. Major impacts are: (1) Major reduction in the solar electricity prices in the region; (2) More investors in renewable energy business; (3) Rise of innovative design of houses to utilize its structure in installation and integration of renewable energy devices; (4) Rise of many service and maintenance of solar technology companies; (5) Establishment of new academic programs and courses in solar and other renewable energy technologies in the higher education institute and technical organizations; (6) More concern and studies on disturbances to the main grid due to solar connection; (7) Major reduction in carbon footprint per capita in GCC countries; (8) Use of more efficient and low consumption household and industrial devices; (9) Boost in battery industry for solar electricity storage.

Aoui, Atman, Moulay Ahmed el Amrani, and Karen Eugenie Rignall. "Global aspirations and local realities of solar energy in Morocco." *Middle East Report (MERIP)* 296 (2020):

Morocco's massive Noor solar power installation in Ouarzazate is celebrated as an important step in the transition to renewable energy. But the benefits are not flowing to all citizens. Rural unrest and other demonstrations of discontent in recent years are piercing the government's techno-optimism. Long-standing repression, economic marginalization and lack of investment in services or infrastructure as well as water pollution are among the local realities faced by residents.

Aspinall, Simon. "Environmental development and protection in the UAE," In *United Arab Emirates: A new perspective*, edited by Ibrahim Abed, and Peter Hellyer, 277–304. Boulder, CO: Trident Press, 2001.

Simon Aspinall looks at the wildlife and environment of the Emirates, providing data to challenge the common misconception that deserts have little to offer in the way of Nature, and examining the way in which conservation of wildlife and the environment has become a key priority of Government policy over the course of the last three decades.

Bahgat, Gawdat. "Lower for longer: Saudi Arabia adjusts to the new oil era." *Middle East Policy* 23, no. 3 (2016): 39–48.

Saudi Arabia, with the largest economy in the Arab world, is deeply dependent on oil exports (approximately 75-80 percent of total revenues). Largely due to high oil prices during most of the last decade, Riyadh was able to establish itself as one of the strongest and fastest-growing economies in the Middle East. According to a recent report by McKinsey Global Institute, the Saudi economy in 2003 was the twenty-seventh largest in the world; by 2014, it had risen to number 19. This economic expansion also eliminated national debt, accumulated huge reserve assets, raised average household income by about 75 percent, and created more than 1.7 million jobs.¹ This astonishing economic performance was driven, almost exclusively, by public spending. The government and the public sector served as the engine of the rapid economic growth. [...] Within this context, the government launched its Vision 2030 in late April and a National Transformational Plan (NTP) in early June. The main goal of these initiatives is to reduce the kingdom's heavy dependency on oil revenues and create a diversified and balanced economic structure.

The next section examines the dynamics of the global oil market in both the short and long terms. I argue that this cycle of low oil prices is different from previous ones. For one thing, low oil prices are projected to last for a long time. A return to a \$100-dollar-per-barrel price range is not likely any time soon. The analysis proceeds to discuss the Saudi government's efforts to cope with persistent low prices and overcome the evolving economic challenges. Different options have been tried or are under consideration: borrowing from local and international markets, drawing down foreign reserves, introducing various forms of taxes, and rationalizing government expenditures by scaling back capital projects and cutting subsidies.

[...]

Barnes, Jessica. "Managing the waters of Ba'ath country: The politics of water scarcity in Syria." *Geopolitics* 14, no. 3 (2009): 510–30.

The Syrian government and international development agencies commonly present water scarcity as being one of Syria's main development challenges. This paper draws on a set of international reports, written in consultation with Syrian officials, to reveal the politics of this scarcity. I show how water scarcity is constructed and ordered through spatial representations. Rather than accepting the common explanation that scarcity is the result of population pressure, I argue that Syria's water scarcity is a consequence of the ruling Ba'ath party's continuous promotion of water-intensive agriculture. This support for the agricultural sector, motivated in part by a desire for food self-sufficiency and growth through an expansion in irrigated agriculture, is linked to the rural roots of the Ba'ath party and the influential Peasants Union. In revealing these key national politics, this analysis highlights how geopolitical studies of water in the Middle East must move beyond a focus on inter-state dynamics and pay critical attention to the politics operating around water distribution and use on a range of scalar levels.

Barnes, Jessica. "Water in the Middle East: a primer." *Middle East Report* (2020): 9.

Introduction to the key issue of water in the Middle East, laid out with graphics and downloadable as a PDF, which is designed to be of use to educators and students.

Conclusion:

Water is a complex resource to manage: It crosses international borders, shifts over time due to climate change and is vulnerable both to depletion and degradation. The resource brings together multiple scales of action, from individuals using water in their homes and fields to governments setting water policies and nations negotiating transboundary water treaties. The management of water presents challenges and no easy answers. Instead of reiterating the simplistic argument that the Middle East faces a water crisis due to its arid environment and growing population, what is needed is more attention to furthering understanding of these complexities.

The Middle East does not have abundant water resources; with climate change, this position is only likely to get more acute. But the challenge of water scarcity and the

experience of many within the region who struggle to find sufficient, clean water for their everyday needs and livelihoods is as much about economic priorities, social inequalities and political relations as it is a function of the region's geography.

"Nature & politics." *Middle East Report* 296 (2020): <https://merip.org/magazine/296/>.

The coronavirus pandemic is vividly highlighting the fundamental links between people, health and the environment. This issue on nature and politics probes the essential but also sometimes fraught relationships between people and their environments in the Middle East. It provides insights into crucial issues of energy, water and climate change and the political struggles between states and their citizens over environmental stewardship, sovereignty and the allocation of resources. It also takes us into spaces of human-environment interaction that are not so commonly discussed—bird markets, Iraqi landscapes contaminated with toxins, sinkholes around the Dead Sea and Turkish wetlands teeming with wildlife. Through these contributions, "Nature and Politics" offers a critical take on contemporary challenges across the Middle East.

TOC:

Nature and Politics

The Editors of Issue #296

Up Front

Water in the Middle East: A Primer

Jessica Barnes

Articles

On Blaming Climate Change for the Syrian Civil War

Jan Selby

Global Aspirations and Local Realities of Solar Energy in Morocco

Atman Aoui, Moulay Ahmed el Amrani, Karen Rignall

Birth Defects and the Toxic Legacy of War in Iraq

Kali Rubaii

Bird Markets, Artisanal Pigeons and Class Relations in the Middle East

Bridget Guarasci

The Unintended Consequences of Turkey's Quest for Oil

Zeynep Oguz

Terra Infirmis – Dead Sea Sinkholes – A Photo Essay

Simone Popperl

The Lost Wetlands of Turkey

Caterina Scaramelli

“Algeria is not for Sale!” Mobilizing Against Fracking in the Sahara

Naoual Belakhdar

An Interview with Sophia Stamatopoulou-Robbins

Tessa Farmer

“Turkey Wants to be Part of the Nuclear Club” An Interview with Can Candan

Kenan Behzat Sharpe

Special Reports

Masdar City 2020

Gökçe Günel

Barthel, Pierre-Arnaud, and Éric Verdeil. “Villes arabes, villes durables? Enjeux, circulations et mise à l’épreuve de nouvelles politiques urbaines. LIMINAIRE.” *Environnement Urbain / Urban Environment* 7 (2013): 1–5.

Le changement climatique, l’urbanisme éco-responsable et la maîtrise de la consommation énergétique sont autant de questions qui ont été érigées depuis quelques années en problèmes publics sur la rive sud de la Méditerranée, dont s’emparent non seulement élus et pouvoirs publics, mais aussi acteurs privés, société civile (ONG et associations) et acteurs internationaux présents dans les pays. Et les villes en tant qu’espaces concentrant désormais une part majeure de la population et de la consommation énergétique, et en tant que systèmes complexes d’acteurs institutionnels et économiques, sont des lieux très sensibles d’expérimentation du développement urbain durable (DUD). Ainsi, la question de la diffusion de cette nouvelle injonction depuis au moins les années 2000 du côté sud de la Méditerranée est posée dans ses modalités, ses nécessaires adaptations et appropriations.

Ce numéro ne vise pas à identifier la vulnérabilité environnementale des villes arabes, ni à dresser l’inventaire des institutions en charge, à l’échelle nationale, du développement durable. Il met plutôt l’accent sur les mobilisations et les projets se revendiquant, à l’échelle d’une ou plusieurs villes, de la problématique du développement urbain durable. Il porte sur les mots d’ordre et sur les formes de mobilisation un regard critique (théoriquement aussi bien que politiquement), à partir de plusieurs axes de questionnement.

Bonine, Michael E, Abbas Amanat, and Michael Ezekiel Gasper, eds. *Is there a Middle East? The evolution of a geopolitical concept*. Stanford: Stanford University Press, 2012.

This book offers diverse debates on the possible manifestations and meanings of the term “Middle East.”

Bookchin, Murray (1921-2006). *The ecology of freedom: The emergence and dissolution of hierarchy*. Palo Alto, CA: Cheshire Books, 1982.

This book was written to satisfy the need for a consistently radical social ecology: an ecology of freedom. It had been maturing in my mind since 1952 when I first became acutely conscious of the growing environmental crisis that was to assume such monumental ...

Boomgaard, Peter, and Marjolein 't Hart. “Globalization, environmental change, and social history: An introduction.” *International Review of Social History* 55, no. S18 (2010): 1–26.

Throughout the ages, the activities of humankind have weighed considerably upon the environment. In turn, changes in that environment have favoured the rise of certain social groups and limited the actions of others. Nevertheless, environmental history has remained a “blind spot” for many social and economic historians. This is to be regretted, as changes in ecosystems have always had quite different consequences for different social groups. Indeed, the various and unequal effects of environmental change often explain the strengths and weaknesses of certain social groups, irrespective of their being defined along lines of class, gender, or ethnicity.

This Special Issue of the *International Review of Social History* aims to bring together the expertise of social and environmental historians. In the last few decades of the twentieth century, expanding holes in the ozone layer, global warming, and the accelerated pace of the destruction of the tropical forests have resulted in a worldwide recognition of two closely related processes: globalization and environmental change. The contributions to this volume provide striking case studies of such connections in earlier periods, revealing a fruitful interconnection between social and environmental history. This introduction provides a historiographical context for the essays that follow, focusing on the relevant notions connected with globalization and environmental change, and stressing the existing interactions between environmental and social history. We are particularly interested in the consequences of processes induced by globalization, how transnational forces and

agents changed the socio-ecological space, and how that affected relationships between different classes in history.

Bordoff, Jason, and Meghan O'Sullivan. "Green upheaval: The new geopolitics of energy." *Foreign Affairs* (2022):

Brauch, Hans Günter. "Policy responses to climate change in the Mediterranean and MENA region during the anthropocene," In *Climate Change, Human Security and Violent Conflict*, 719–94. New York, NY: Springer, 2012.

According to the Fourth Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC 2007, 2007a), the Middle East and North Africa (MENA) or the West Asia and North Africa (WANA) region will be severely affected by the physical effects of climate change such as i) high temperature increases, ii) significant decline in precipitation, and iii) projected sealevel rise, especially in the Nile delta and the low-lying coastal regions with high population density.

Braunstein, Jürgen. "Green ambitions, brown realities." (2020): 92, <https://www.belfercenter.org/publication/green-ambitions-brown-realities-making-sense-renewable-investment-strategies-gulf>.

Gulf Cooperation Council (GCC) countries have attracted worldwide attention as a result of their ambitious plans to restructure their carbon-driven economies. These plans include efforts to "green" their economies and investments, notably via massive infrastructure projects. The renewable energy targets of GCC nations are remarkable. As of 2018, Saudi Arabia, the UAE, Qatar, and Kuwait collectively planned to develop solar energy production by 2030 to about 15 percent of today's total worldwide solar capacity. The major drivers behind this trend are Saudi Arabia and the UAE.

Gulf countries have hailed their investments in renewable energy, but some basic questions remain about the extent to which it makes sense for GCC states to invest aggressively in renewables. The sheer magnitude of such investments will require these countries to mobilize significant public resources. Therefore, such an

assessment requires these countries to focus on national interests, not just a desire to be perceived as constructive participants in the global transition away from carbon energy.

This report starts by identifying four common strategic justifications for investing in renewable energy in GCC countries. Each of these rationales highlights a different aspect of renewable energy investments. In addition, each rationale is based on different assumptions about the underlying drivers of such investments, and each rationale is based on different assumptions about the future of energy.

First, the revenue maximization argument relates to the inefficiencies of burning expensive oil, which could otherwise be exported. Second, the job creation rationale perceives renewable investments as an effective means of achieving socioeconomic goals. Third, the hedging argument considers renewable investments to be a way to address the risk of heavy reliance on oil; namely, asset stranding and low income from oil in a low-price environment. Finally, the geopolitics argument considers renewable investments as a means to gain geopolitical benefits, such as increasing domestic energy security and building reserve oil capacity.

For smaller Gulf economies, notably the UAE and Kuwait, only the geopolitics argument, and in particular the energy security aspect of that argument, makes sense as a driving rationale for investing in renewable energy. By contrast, for Saudi Arabia, the revenue maximization, hedging, and geopolitical arguments all serve to justify large investments in renewable energy. For Qatar, all of the potential arguments for investing in renewable energy are weak, at least when compared to how those justifications apply to the other GCC countries (see Tables 1 and 2).

Findings and Policy Implications

Contrary to popular belief, from a national strategic perspective, job creation should not be the key driving rationale behind aggressive renewable investments in GCC countries.

Saudi Arabia is in the nascent stage of implementing its ambitious renewable targets. But in order to fulfill the geopolitics, revenue maximization, and hedging rationales, Saudi Arabia needs to significantly increase its investments in renewable energy production.

Kuwait's effort to replace oil-based energy production with renewable energy production, in order to free up more oil for export, will have a much smaller economic impact than Saudi Arabia's effort.

Kuwait needs to step up its renewable investments in order to be aligned with the expectations of the energy security rationale, but Qatar's renewable energy agenda makes little sense in relation to any of the four investment rationales described above. The UAE's announced renewable targets are reasonable in terms of an energy security goal, but it needs to increase investment. In comparison with its GCC peers, the UAE is most advanced in the implementation of its renewable energy targets.

Bromwich, Brendan. "Nexus meets crisis: a review of conflict, natural resources and the humanitarian response in Darfur with reference to the water–energy–food nexus." *International journal of water resources development* 31, no. 3 (2015): 375–92.

Darfur has been widely used as a case study by both those arguing for causality between environmental scarcity and war and those disputing it. This article challenges that approach by drawing on debates taking place within Darfur, reflecting on both the conflict and the humanitarian response. It argues that reviewing Darfur on its own terms makes a stronger basis to identify transferable lessons for interventions elsewhere. It considers water, food and energy, and finds that supporting governance is an essential theme for promoting economic recovery and laying a foundation for a well-managed water–energy–food nexus.

Bryant, Raymond L, and Sinéad Bailey. *Third world political ecology: An introduction*. London and New York: Routledge, 1997.

An effective response to contemporary environmental problems demands an approach that integrates political, economic and ecological issues. Third World Political Ecology provides an introduction to an exciting new research field that aims to develop an integrated understanding of the political economy of environmental change in the Third World. The authors review the historical development of the field, explain what is distinctive about Third World political ecology, and suggest areas for future development. Clarifying the essentially politicised condition of environmental change today, the authors explore the role of various actors - states, multilateral institutions, businesses, environmental non-governmental organisations, poverty-stricken farmers, shifting cultivators and other 'grassroots' actors - in the development of the Third World's politicised environment. Third World Political Ecology is the first major attempt to explain the development and characteristics of environmental problems that plague parts of Asia, Africa and Latin America. Drawing on examples from throughout the Third World, the book will be of interest to all those

who wish to understand the political and economic bases of the Third World's current predicament.

Burger, Nicholas, Grant, Audra, Kups, Sarah, Rana, Yashodhara, and Wodon, Quentin. "Focus countries for the study on climate change and migration in the MENA region." (2014): <https://mpira.ub.uni-muenchen.de/56928/>.

This study aims to be relevant for the MENA region as a whole, but it focuses on five countries - Algeria, Egypt, Morocco, Syria, and Yemen, and in many (but not all) cases on specific geographic areas within each of the five countries. After a brief introduction, this chapter outlines the reasons that led to the choice of the five focus countries. Next, to provide contextual background for the study, the chapter provides an introductory discussion of climate and migration patterns in each of the five countries, and of the policy and institutional context in which discussions on climate change take place.

Burke III, Edmund. "The big story: human history, energy regimes, and the environment," In *The environment and world history*, edited by Edmund Burke III, and Kenneth Pomeranz, 33–51. Berkeley: University of California Press, 2009.

In this chapter I examine the environmental consequences of human development over the very long term as a way of providing a different perspective on the environmental quandary we currently face. The other essays in this book address the environmental legacies of world civilizations and regions over the more recent past or survey different regions' environmental histories. Here I examine the deep history of humanity, energy regimes, and the environment. My purpose is threefold. First, by placing modernity in the larger context of the flow, conversion, and storage of planetary bioenergy, I want to call into question the conventional historical narrative, which views the Industrial Revolution as a natural outcome of human development, and instead insist on the ways in which it constituted an unprecedented break in human relations with nature and the environment. Second, by focusing on the history of energy regimes, I want to disaggregate the Industrial Revolution into analytically distinct processes in order to argue for the decisive importance of the fossil-fuel revolution. Third, by studying energy regimes throughout world history, I seek to contextualize current concerns. At a time of renewed anxiety about the end of oil, the current moment seems an especially appropriate one in which to conduct such an exercise.

Burke III, Edmund. "The transformation of the Middle Eastern environment, 3000 BCE–2000 CE," In *The environment and world history*, edited by Edmund Burke III, and Kenneth Pomeranz, 81–117. Berkeley: University of California Press, 2009.

The environment is rarely mentioned in most histories of the modern Middle East. Seldom addressed as a subject in its own right, the environment tends to hover on the margins of histories with other presumably more important topics to discuss, such as the onset of imperialism and nationalism in the region, and its political and economic transformation. Indeed, in most histories of the modern Middle East, the environment itself is viewed as a source of backwardness, which only the application of modern science and technology can ...

Burke III, Edmund, and Kenneth Pomeranz, eds. *The environment and world history*. Berkeley: University of California Press, 2009.

In 11 essays, the contributors examine the connections between environmental change and other major topics of early modern world history: population growth, commercialization, imperialism, industrialization, the fossil fuel revolution, and more.

Burke, Matthew J., and Jennie C. Stephens. "Political power and renewable energy futures: A critical review." *Energy Research & Social Science* 35 (2018): 78–93.

Inspired by the energy democracy movement, this conceptual review critically explores relationships between concentrated or distributed renewable energy and political power. Advocates assert that because the renewable energy transition is fundamentally a political struggle, efforts to shift from fossil fuels and decarbonize societies will not prove effective without confronting and destabilizing dominant systems of energy power. The objectives of this paper include: 1) theorizing and exploring the relationships between renewable energy and political power, 2) critically assessing tensions associated with an energy democracy agenda, and 3) drawing out the implications for democratizing renewable energy development in practice. Distributed energy-politics posits that distributed energy sources and technologies enable and organize distributed political power and vice versa. Efforts are underway to find ways to re-organize distributed energy flows into aggregated

and concentrated stocks of energy and other forms of political power. More democratic renewable energy futures may benefit from strengthening democratic practices and outcomes, extending democratization of energy systems across all components, stages and end uses, and sharpening positions relative to dominant pressures of capitalism and market ideology, the ideology of unlimited growth, and the modernist/industrialist agenda. Renewable energy systems offer a possibility but not a certainty for more democratic energy futures.

Burt, John A. "The environmental costs of coastal urbanization in the Arabian Gulf." *City* 18, no. 6 (2014): 760–70.

Coastal urbanization has expanded rapidly in recent decades in the Arabian Gulf and this has put increasing pressure on important but underappreciated coastal ecosystems throughout the region. Unlike the relatively barren terrestrial system, coastlines in the Gulf contain a mosaic of highly productive ecosystems, including sabkhas, mudflats, mangrove swamps, seagrasses and coral reefs, among others, that provide food and habitat for diverse ecological communities and support over half a billion dollars in fisheries activities annually. In recent years there has been accelerating loss and degradation of each of these systems as a result of cumulative impacts from coastal development, overfishing, industrial expansion and other population-driven stressors, and the Arabian Gulf is now considered among the most degraded marine eco-regions in the world. The future of this unique and valuable system is now at stake, and only with rapid and dramatic changes in coastal policy, regulation and management can we hope to stem the decline of coastal ecosystems in the Gulf. The highly centralized decision-making framework characteristic of governance in this region should be seen as an advantage in this regard. Improved awareness of the economic, societal and ecological value of the coastal ecosystem among leaders could result in rapid changes in policy direction and financial support for coastal management, resulting in more environmentally sustainable urban development on the Gulf's coasts.

Capstick, Stuart, Lorraine Whitmarsh, Wouter Poortinga, Nick Pidgeon, and Paul Upham. "International trends in public perceptions of climate change over the past quarter century." *Wiley Interdisciplinary Reviews: Climate Change* 6, no. 1 (2015): 35–61.

Public perceptions of climate change are known to differ between nations and

to have fluctuated over time. Numerous plausible characterizations of these variations, and explanations for them, are to be found in the literature. However, a clear picture has not yet emerged as to the principal trends and patterns that have occurred over the past quarter-century or the factors behind these changes. This systematic review considers previous empirical research that has addressed the temporal aspects to public perceptions. We address findings that have been obtained since the 1980s and using a range of methodologies. In this review, we consider early, seminal work examining public perceptions; survey studies carried out over long timescales and at an international scale; detailed statistical analyses of the drivers of changing perceptions; and qualitative research featuring a longitudinal component. Studies point to growing skepticism in the latter 2000s in some developed countries, underpinned by economic and sociopolitical factors. Even so, in many parts of the world, there has been growing concern about climate change in recent years. We conclude that the imbalance in the literature toward polling data, and toward studies of public perceptions in Western nations (particularly the United States), leaves much unknown about the progression of public understanding of climate change worldwide. More research is required that uses inferential statistical procedures to understand the reasons behind trends in public perceptions. The application of qualitative longitudinal methodologies also offers the potential for better appreciation of the cultural contexts in which climate change perceptions are evolving.

Castree, Noel, William M. Adams, John Barry, Daniel Brockington, Bram Büscher, Esteve Corbera, David Demeritt, Rosaleen Duffy, Ulrike Felt, Katja Neves, Peter Newell, Luigi Pellizzoni, Kate Rigby, Paul Robbins, Libby Robin, Deborah Bird Rose, Andrew Ross, David Schlosberg, Sverker Sörlin, Paige West, Mark Whitehead, and Brian Wynne. "Changing the intellectual climate." *Nature Climate Change* 4, no. 9 (2014): 763–68.

Calls for more broad-based, integrated, useful knowledge now abound in the world of global environmental change science. They evidence many scientists' desire to help humanity confront the momentous biophysical implications of its own actions. But they also reveal a limited conception of social science and virtually ignore the humanities. They thereby endorse a stunted conception of 'human dimensions' at a time when the challenges posed by global environmental change are increasing in magnitude, scale and scope. Here, we make the case for a richer conception predicated on broader intellectual engagement and identify some preconditions for its practical fulfilment. Interdisciplinary dialogue, we suggest, should engender plural

representations of Earth's present and future that are reflective of divergent human values and aspirations. In turn, this might insure publics and decision-makers against overly narrow conceptions of what is possible and desirable as they consider the profound questions raised by global environmental change.

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Chakrabarty, Dipesh. "The Climate of history: Four theses." *Critical Inquiry* 35, no. 2 (2009): 197–222.

Thesis 1: Anthropogenic explanations of climate change spell the collapse of the age-old humanist distinction between natural history and human history

Thesis 2: The idea of the anthropocene, the new geological epoch when humans exist as a geological force, severely qualifies humanist histories of modernity/globalization

Thesis 3: The geological hypothesis regarding the anthropocene requires us to put global histories of capital in conversation with the species history of humans

Thesis 4: The cross-hatching of species history and the history of capital is a process of probing the limits of historical understanding

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Chakrabarty, Dipesh. "Postcolonial studies and the challenge of climate change." *New Literary History* 43, no. 1 (2012): 1–18.

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Chedid, R, and F Chaaban. "Renewable-energy developments in Arab countries: a regional perspective." *Applied Energy* 74 (2003): 211–20.

This paper details the status of renewable-energy (RE) developments in Arab countries (AC) as an essential element for the sustainable economic development of these countries, despite their wealth in oil and gas. The paper first presents a review of the RE resources in AC and sheds light on some achieved and/or ongoing RE projects in the region. It also examines the adequacy of the present national institutions responsible for RE developments, and evaluates the effectiveness of work programmes of major regional and international organizations supporting RE activities. Finally, the paper identifies major obstacles hindering the large-scale

penetration of RE into the energy markets of AC, and draws conclusions for increasing RE contribution to those markets.

Cherry, Todd L., Jorge H. García, Steffen Kallbekken, and Asbjørn Torvanger. "The development and deployment of low-carbon energy technologies: The role of economic interests and cultural worldviews on public support." *Energy Policy* 68 (2014): 562–66.

Large-scale deployment of low-carbon energy technologies is crucial to mitigating climate change, and public support is an important barrier to policies and projects that facilitate deployment. This paper provides insights to the origins of public opposition that can impede the adoption of low-carbon technologies by investigating how perceptions are shaped by local economic interests and individual cultural worldviews. The research considers both carbon capture and storage and wind energy technologies because they differ in maturity, economic impact and resource base. Further, for each technology, the research examines support for two types of policies: deployment in local community and public funding for research and development. Results indicate the influence of economic interests and cultural worldviews is policy specific. Individual cultural worldviews do not affect support for the deployment of technology, but they do significantly influence a person's support for publicly funded research and development.

Choukri, Karim, Ahmed Naddami, and Sanaa Hayani. "Renewable energy in emergent countries: lessons from energy transition in Morocco." *Energy, Sustainability and Society* 7, no. 1 (2017):

Morocco, which has no conventional energy resources, depends entirely on the international primary energy market to satisfy its growing demand due to its economic growth and demographic progression. The country imports the majority of its energy source supply. Morocco has implemented an important energy strategy that supports the country's transition to renewable energy and energy efficiency that generalizes across all consumer sectors of the economy (housing, transport, industry). To fulfill this energy transition, the liberalization of renewable energy market was adopted and financial mechanisms have been created to stimulate private sector involvement and to facilitate the implementation of the public–private partnership. The government and public institutions that were created to accompany Morocco's energy vision have committed to drive the development of projects in the priority

areas of renewable energy and energy efficiency, but the country still needs to deal with many barriers related to the policy, financial, and technical frameworks.

Cidell, Julie. "Environmental imaginaries," In *Encyclopedia of geography*, edited by Barney Warf, 933–34. Thousand Oaks: Sage, 2010.

Clark, Timothy. "Nature, post nature," In *The Cambridge companion to literature and the environment*, edited by Louise Westling, 75–89. Cambridge: Cambridge University Press, 2014.

Corbett, Julia B. "A faint green sell: Advertising and the natural world," In *Enviropop: Studies in environmental rhetoric and popular culture*, 141–60. Westport, CT: Praeger, 2002.

It is virtually impossible to think of any other message that is as pervasive, invasive, and ubiquitous as the advertisement. Of course ads are sandwiched between news and entertainment programming in the mass media, but there is also the ad on the bus bench and on the bus, on the telephone pole and billboard, on the sweatshirt, before the movie and on the popcorn bag, on "commercial free" radio, on cars and trucks, on Web sites, stuffed in bills and mailboxes, and on classroom walls. According to the American Association of ...

Corbett, Julia B. *Communicating nature: How we create and understand environmental messages*. Washington, DC: Island Press, 2006.

A broader and more comprehensive understanding of how we communicate with each other about the natural world and our relationship to it is essential to solving environmental problems. How do individuals develop beliefs and ideologies about the environment? How do we express those beliefs through communication? How are we influenced by the messages of pop culture and social institutions? And how does all this communication become part of the larger social fabric of what we know as "the environment"? *Communicating Nature* explores and explains the

multiple levels of everyday communication that come together to form our perceptions of the natural world. Author Julia Corbett considers all levels of communication, from communication at the individual level, to environmental messages transmitted by popular culture, to communication generated by social institutions including political and regulatory agencies, business and corporations, media outlets, and educational organizations. The book offers a fresh and engaging introductory look at a topic of broad interest, and is an important work for students of the environment, activists and environmental professionals interested in understanding the cultural context of human-nature interactions.

Cutler, Brock. "Historical (f)actors: Environments and histories in modern North Africa." *History Compass* 16, no. 12 (2018): e12509.

Despite the rise in environmental thinking and environmental questions throughout the humanities—what some people call the “environmental turn”—environmental history has remained marginal to the field of North African history. This article explores the field of environmental history of North Africa in order to think through some potential ways to address this lacuna. The article does this by first providing a brief overview of the field of environmental history, with an emphasis on North Africa. It then turns to the broader trends in this area and highlights some recent scholarship before suggesting an alternative approach that might be useful to North Africanists and other scholars.

Davis, Diana K. "Power, knowledge, and environmental history in the Middle East and North Africa." *International Journal of Middle East Studies* 42, no. 4 (2010): 657–59.

To consider in what ways incorporating the emerging field of environmental history into studies of the Middle East challenges our views of the past and/or present, it is necessary first to take stock of our mainstream notions of the environment in the Middle East and North Africa (MENA) and how we think it has changed over the last several thousand years. The most common received wisdom about the environment in the MENA is that it is an arid, marginal environment, in many places a wasteland degraded by overgrazing and deforestation for hundreds if not thousands of years. The local populations, especially nomads and small farmers, are frequently blamed for the alleged environmental ruin. Born in large part of Western imperialism in the region, this environmental imaginary of the MENA has been uncritically adopted by the majority of postindependence ruling elites as well as development agencies.

Davis, Diana K. "Imperialism, orientalism, and the environment in the Middle East: history, policy, power, and practice," In *Environmental Imaginaries of the Middle East and North Africa*, edited by Edmund Burke, and Diana K. Davis, 1–22. Athens, Ohio: Ohio University Press, 2011.

Introduction to the book, the abstract of which is:

The landscapes of the Middle East have captured our imaginations throughout history. Images of endless golden dunes, camel caravans, isolated desert oases, and rivers lined with palm trees have often framed written and visual representations of the region. Embedded in these portrayals is the common belief that the environment, in most places, has been deforested and desertified by centuries of misuse. It is precisely such orientalist environmental imaginaries, increasingly undermined by contemporary ecological data, that the eleven authors in this volume question. This is the first volume to critically examine culturally constructed views of the environmental history of the Middle East and suggest that they have often benefitted elites at the expense of the ecologies and the peoples of the region. The contributors expose many of the questionable policies and practices born of these environmental imaginaries and related histories that have been utilized in the region since the colonial period. They further reveal how power, in the form of development programs, notions of nationalism, and hydrological maps, for instance, relates to environmental knowledge production.

Davis, Diana K. "Scorched earth: the problematic environmental history that defines the Middle East," In *Is there a Middle East? The evolution of a geopolitical concept*, edited by Michael E Bonine, Abbas Amanat, and Michael Ezekiel Gasper, 170–87. Stanford: Stanford University Press, 2012.

Conclusion:

"Because so much "scientific" research on the Middle East has been conducted by Europeans (and Americans) steeped in the declensionist narrative, this inaccurate narrative has been incorporated into the educational and research systems of the postcolonial Middle East just as it has in much of the global north. Many people in the region, from researchers to government administrators to average citizens, subscribe to it. If the majority of people in the Middle East hold a common identity as inhabitants of a degraded environment, what, then, are the political, economic, and social ramifications of this? One answer is the type of environmental

development exemplified by the United Arab Emirates in recent years, which overexploits groundwater reserves in a highly unsustainable manner to “roll back the desert” with a variety of afforestation and other “greening” projects. A second result is the sort of agricultural/social development currently being implemented in Egypt’s Western Desert with the building of the Toshka canal. This “New Valley Project” aims to restore the “ancient fertility” of the region and to produce modern organic produce in the pristine desert environment for the “new, dean” model Egyptian citizen. A third outcome is the kind of economic development typified by the hugely expensive indoor ski resort in Dubai that has prompted local people to comment that “now it is Europe here too.* Exploration of such questions for the Middle East holds promise for meaningful research that may well help to bring about more appropriate, sustainable, and less socially exploitative development in these splendid desert spaces in the future.”

de Souza, Luiz Enrique Vieira, Estevão Mota Gomes Ribas Lima Bosco, Alina Gilmanova Cavalcante, and Leila da Costa Ferreira. “Postcolonial theories meet energy studies: “Institutional orientalism” as a barrier for renewable electricity trade in the Mediterranean region.” *Energy Research & Social Science* 40 (2018): 91–100.

This article interweaves energy studies and postcolonial theories. We argue that the concepts and theories developed by postcolonialist scholars to criticize the cultural and epistemological relations of power between Europe and its former colonies can be expanded to analyse the failure of international energy cooperation projects such as the Mediterranean Solar Plan (MSP) and Desertec. Based on model studies conducted by the German Aerospace Centre (DLR), we present socioeconomic and environmental criteria to question whether such projects are mutually beneficial or constitute an asymmetrical exploitation of solar resources. Furthermore, we analyse the risks discussed in the literature about the MSP and Desertec, and identify that they are actually European misrepresentations of Middle East and North African (MENA) countries with negative implications for Concentrating Solar Power investments in the region. Finally, we present a conceptual definition of “institutional orientalism”, arguing that such distorted perceptions of risks are rooted in historical imbalances of power. These asymmetries reproduce mechanisms of wealth transfer and pressure MENA countries to adopt European patterns of energy regulation and governance.

Death, Carl. “Four discourses of the green economy in the global South.” *Third World*

Quarterly 36, no. 12 (2015): 2207–24.

This article identifies four contrasting global discourses of the green economy in contemporary usage: green resilience, green growth, green transformation and green revolution. These four discourses are manifested in recent green economy national strategies across the global South, including in Ethiopia, India, South Korea and Brazil. Disaggregating these discourses is politically important, and shows their different implications for broader political economies of the green state in the global South.

Debaise, Didier, Pablo Jensen, M. Pierre Montebello, Nicolas Prignot, Isabelle Stengers, and Aline Wiame. “Reinstituting nature: A Latourian workshop.” *Environmental Humanities* 6 (2015): 167–74.

At the end of July 2014 there was a week-long workshop held at the Ecole des Mines in Paris, Bruno Latour’s former work-place. This was a final workshop, convened by Latour’s project, An Inquiry into Modes of Existence, which was not only a book, but a website that was an experiment in interactive metaphysics that had been going on for four years.¹ About 30 participants gathered to workshop and rewrite some key contested areas that had been challenged on the site with discussions and counter-examples. One of the round tables working away during the week, occasionally with changes in personnel, was on Nature. Their job (like the other round tables on Politics, Diplomacy, Religion and Economics) was to ‘reboot’ or reinstitute a concept close to the heart of the Moderns. The assumption was that the traditional concept of nature, as developed through modern European history, would no longer be adequate to a future beset by environmental crises. The main people working on a draft were Didier Debaise, Pablo Jensen, Pierre Montebello, Nicolas Prignot, Isabelle Stengers and Aline Wiame. When they finished the draft, I translated it and it was presented, in French and English, in a final two-day public session at Science Po, to a group of seven international scholars designated as “chargés d’affaires,” or “diplomats from the future” whose job was to assess the results of our labours in terms of how they might be met by Gaia, the ur-representative of future planetary crises. The text, originally under the title of Our “Nature,” was as follows.

Derr, Jennifer L. *The Lived Nile: Environment, disease, and material colonial economy in Egypt*. Stanford University Press, 2019.

In October 1902, the reservoir of the first Aswan Dam filled, and Egypt's relationship with the Nile River forever changed. Flooding villages of historical northern Nubia and filling the irrigation canals that flowed from the river, the perennial Nile not only reshaped agriculture and the environment, but also Egypt's colonial economy and forms of subjectivity. Jennifer L. Derr follows the engineers, capitalists, political authorities, and laborers who built a new Nile River through the nineteenth and early twentieth centuries. The river helped to shape the future of technocratic knowledge, and the bodies of those who inhabited rural communities were transformed through the environmental intimacies of their daily lives. At the root of this investigation lies the notion that the Nile is not a singular entity, but a realm of practice and a set of temporally, spatially, and materially specific relations that structured experiences of colonial economy. From the microscopic to the regional, the local to the imperial, *The Lived Nile* recounts the history and centrality of the environment to questions of politics, knowledge, and the lived experience of the human body itself.

Djoundourian, Salpie. "Environmental movement in Lebanon." *Environment, Development and Sustainability* 11, no. 2 (2009): 427–38.

The paper reviews and assesses the evolution of the environmental movement in both the public and the private sector in Lebanon. It studies the public sector involvement in the environmental movement by reviewing the commitments made by the government to the local, regional and international communities. The paper presents a summary of all the decisions, decrees, and laws pertaining to environmental protection that the Lebanese government has instituted over time, as well as all the conventions and agreements that the country has ratified and/or signed. Compared to the Arab world in the Middle East and North Africa, Lebanon is relatively more active and integrated in the world community. Using the total number of established environmental organizations and the level of reported activities aimed at spreading environmental awareness and educating people as indicators of private sector involvement in the environmental movement, the paper concludes that the post war era is characterized by a significant increase in the number of established organizations. It also concludes that there is a co-movement between economic and environmental variables.

Dryzek, John S. *The Politics of the earth: Environmental discourses*. Oxford: Oxford University Press, 2013.

The Politics of the Earth: Environmental Discourses, Third Edition, provides an accessible introduction to environmental politics by examining the ways in which people use language to discuss environmental issues. Leading scholar John S. Dryzek analyzes the various approaches that have dominated the field over the last three decades--approaches that are also likely to be influential in the future--including survivalism, environmental problem-solving, sustainability, and green radicalism. Dryzek examines and assesses the history, interplay, and impact of these perspectives, concluding with a plea for ecological democracy. An engaging writing style and helpful boxed material make this complex subject more understandable to students.

El-Katiri, Laura. *A roadmap for renewable energy in the Middle East and North Africa*. Oxford: Oxford Institute for Energy Studies, 2014.

Home to more than half of the world's crude oil and more than a third of its natural gas reserves, the MENA region has, for the past fifty years, gained enormous significance as a global producer and exporter of energy. The MENA region is already a major energy consumer, and is forecast to continue to account, alongside Asia, for the majority of the world's energy demand growth well into the 2030s; placing domestic energy policies at the heart of the region's economic agendas for the coming decades. This paper argues that renewable energy – most importantly solar power, with its particular regional climatic advantage – could play a significant role as a cost-competitive alternative to conventional fossil fuels, if the full opportunity cost of domestically consumed oil and natural gas resources is fully priced into the regional energy system. The absence of cost-reflective energy and electricity tariffs in the MENA region today currently conceals this potential cost advantage; and leaves renewable energy deployment subject to further, economically distorting, policies such as renewables targets and fiscal incentives. Systematically opening up the economic opportunities offered by renewable energy to the MENA region will hence require structural reform of regional energy market and pricing mechanisms, thereby rationalizing the use of different energy sources in each domestic market.

Ellenblum, Ronnie. *The Collapse of the eastern Mediterranean: Climate change and the decline of the East, 950-1072*. Cambridge University Press, 2012.

As a 'Medieval Warm Period' prevailed in Western Europe during the tenth

and eleventh centuries, the eastern Mediterranean region, from the Nile to the Oxus, was suffering from a series of climatic disasters which led to the decline of some of the most important civilizations and cultural centres of the time. This provocative study argues that many well-documented but apparently disparate events - such as recurrent drought and famine in Egypt, mass migrations in the steppes of central Asia, and the decline in population in urban centres such as Baghdad and Constantinople - are connected and should be understood within the broad context of climate change. Drawing on a wealth of textual and archaeological evidence, Ronnie Ellenblum explores the impact of climatic and ecological change across the eastern Mediterranean in this period, to offer a new perspective on why this was a turning point in the history of the Islamic world.

Erdur, Oğuz. "Reappropriating the "Green": Islamist environmentalism." *New Perspectives on Turkey* 17 (1997): 151–66.

Soon after coming to power in 1994, one of the first actions of the Islamist municipality in Istanbul was to paint the cobblestones around the municipal area green. The semiotics involved in this seemingly unimportant alteration from the usual yellow or white was immediately recognized by the media, which in turn drew the public's attention to the issue. The municipality was harshly criticized for marking out its territory with an Islamist symbol, i.e., the color green. The mayor, in return, responded by asserting that green was one of the colors that was legally designated for this particular purpose. Yet, instead of arguing further in terms of the lawfulness of this action and democratic rights involved in the administration of a municipality, he declared that the green cobblestones in fact symbolized the environmentalist aspect of the municipal policy.

Eskjær, Mikkel Fugl. "Climate change communication in Middle East and Arab countries," In *Oxford Research Encyclopedia of Climate Science*, New York, NY: Oxford University Press USA, 2016.

In terms of climate change, Middle East and Arab countries cover a vast and diverse region with stark variations in natural resources, ecological footprints, and political priorities. It includes large oil and gas producing nations (the Gulf States) as well as resource-depleted countries (Jordan, Syria). Most countries rely on carbon energy, while a few have developed an alternative vision based on renewables (Morocco). It is home to both highly affluent countries (e.g., UAE) as well as poor and

conflict-ridden societies (Iraq, the Levant, Yemen).

Although the region as a whole is particularly vulnerable to climate change due to low levels of socio-ecological resilience, potential conflicts over natural resources (e.g., water), and almost chronic refugee and immigration crises, there are considerable differences in the region's adaptive resources and mitigation strategies. This regional heterogeneity, however, is rarely reflected in the region's climate change communication, which (with a few exceptions) tends to follow similar communicative patterns.

Long-running social and religious conflicts in the Middle East have pushed climate change down the agenda of public opinion and news reporting in most Arab countries. Moreover, many Arab countries share a semi-authoritarian media system, which seems to exacerbate this tendency. In order to avoid crossing editorial redlines, climate change reporting is mostly copyedited from international news agencies. Local reporting is sparse as it may easily touch on sensitive issues concerning inadequate governance. Consequently, climate change has traditionally been covered as foreign news with a focus on international climate change negotiations—and hence limited relevance for a regional readership.

However, new information technology and an increasing focus on raising awareness on climate change points toward alternative channels of climate change communication in Middle Eastern and Arab countries.

Farmer, Tessa, and Jessica Barnes. "Environment and society in the Middle East and North Africa: Introduction." *International Journal of Middle East Studies* 50, no. 3 (2018): 375–82.

... *Dwelling in Conflict: Negev Landscapes and the Boundaries of Belonging* (Stanford, Calif.: Stanford University Press, 2016); Gareth Doherty, *Paradoxes of Green: Landscapes of a City-State* (Berkeley, Calif.: University of California Press, 2017); Ståle Knudsen, *Fishers and ...*

Farzanegan, Mohammad Reza, and Gunther Markwardt. "Development and pollution in the Middle East and North Africa: Democracy matters." *Journal of Policy Modeling* 40, no. 2 (2018): 350–74.

The Middle East and North Africa (MENA) countries are among the world's top emitters of CO₂ and SO₂ in per capita terms. The objective of this paper is to analyze whether investing in the democratic development of these countries is an effective tool to make the economic development in this region more environmentally compatible. Using panel data on the income-emission-democracy nexus in 17 MENA countries from 1980 to 2005, we find evidence that improvements in the democratic development of the MENA countries help to mitigate environmental problems. Our results clearly show that the quality of democratic institutions has a greater influence on local environmental problems than on global environmental issues in the MENA region.

Feindt, Peter H., and Angela Oels. "Does discourse matter? Discourse analysis in environmental policy making." *Journal of Environmental Policy and Planning* 7, no. 3 (2005): 161–73.

This Special Issue is concerned with theories and methodologies of discourse analysis and their contribution to environmental policy research in particular. It is a response to three theoretical challenges in the field of environmental policy and public management of natural resources: (i) environmental policy problems are obviously the effect of social constructions although they concern 'natural' objects; (ii) struggles about concepts, knowledge and meaning are an essential element of environmental policy; (iii) environmental discourse has material and power effects as well as being the effect of material practices and power relations. These three challenges question to what extent is environmental policy about 'nature' and the 'environment'? After shortly explaining these challenges, this introduction will sketch out particularities of the discursive perspective and distinguish between a Foucaultian and non-Foucaultian perspective. Following this, it will be shown how the contributors to the Special Issue use discourse analysis to treat nature and environment as contested concepts. The paper concludes with a discussion concerning achievements of and challenges to discourse analysis in environmental policy and planning.

Feitelson, Eran, and Amit Tubi. "A main driver or an intermediate variable? Climate change, water and security in the Middle East." *Global Environmental Change* 44 (2017): 39–48.

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.

Fløttum, Kjersti. "A linguistic and discursive view on climate change discourse." *La revue du Groupe d'Étude et de Recherche en Anglais de Spécialité (ASp)* 58 (2010): 19–37.

As climate change debate is rapidly evolving, we hear a multitude of voices: different actors are getting involved around addressing the challenges, setting priorities for new knowledge, and framing key questions and actions. Whose voices are these? And how are they "translating" each other's knowledge? In order to answer these questions, it is necessary to study how climate knowledge, which has its origin in "objective" scientific discourse, is transmitted to public and political argumentative or action-oriented discourse. How do actors at different levels construct their climate politics linguistically? The interdisciplinary research project to which this paper is related aims to unpack this polyphonic discourse. In the present contribution, an analysis of a document produced by the Inter-governmental Panel on Climate Change (IPCC) is undertaken: the "Summary for policymakers" with the main IPCC findings from 2007. This document takes climate research findings as a point of departure and puts an emphasis on the need of adaptation and political action.

Fløttum, Kjersti. "Linguistic analysis in climate change communication," In *Oxford research encyclopedia of climate science*, Oxford: Oxford University Press, 2016.

Climate change is one of the most pressing issues facing humanity today. One reason is that, in recent years, it has moved from being a predominantly physical phenomenon to being simultaneously a political, social, and cultural phenomenon—and thus, a communication challenge. Current research shows that the meaning people ascribe to climate change is closely related to how it is portrayed during communication. Language plays a crucial role in this. Language not only reflects and expresses facts and observations but also influences attitudes and behavior. It helps to represent the reality but can also create new realities. In addition, the climate change debate is particularly multi-voiced, including both explicit and implicit or hidden voices representing different actors and interests. In order to know more about to what extent and in what way language matters, various linguistic and textual studies are undertaken: studies of words, of combinations of words, and of entire texts taken from different contexts, such as scientific reports, political documents, mainstream media, and new social media. Knowledge from linguistic and textual studies contributes to an improved knowledge base for societal and political actions to be undertaken in order to avoid dangerous consequences of climate change.

Fløttum, Kjersti. "Klimanarrativer i ulike sjangrer." *Sakprosa* 9, no. 1 (2017): 1–28.

Det overordnede forskningsspørsmålet i denne artikkelen dreier seg om i hvilken grad det er mulig å anvende en narrativ tilnærming i analyser av svært forskjellige sjangrer av tekster om klimaendringer. Resultatene viser at det narrative perspektivet bidrar til å identifisere og forklare ulike komponenter og aktørroller i en kompleks klimadiskurs. Innledningen presenterer utviklingen rundt studier av språkbruk i klimadebatten. Deretter følger en kort gjennomgang av narrativbegrepet i et tekstlingvistisk perspektiv. Hovedinspirasjonen er hentet fra Jean-Michel Adams arbeid med narrativsekvenser, kombinert med enkelte aspekter fra Narrative Policy Framework (NPF) utviklet av Michael Jones og kollegaer. Dette rammeverket blir presentert gjennom enkeltstudier av ulike sjangrer: FN- rapporter, «Summaries for policymakers» i rapporter fra Intergovernmental Panel on Climate Change (IPCC), Green & White Papers, Stortingsmeldinger (som svarer til de engelske «White Papers») og meningsmålingsdiskurs. I deler av analysene blir språklige markører for polyfoni (flerstemmighet) integrert i den narrative analysen. I de avsluttende kommentarene pekes det på nødvendigheten av å bevege seg fra et narrativt makronivå til et

lingvistisk mikronivå for å gjøre rede for klimadiskursens flerstemmighet (eller polyfonien).

The overarching research question of the present paper concerns the possibility of using a narrative approach in the analysis of substantially different genres of texts dealing with the climate issue. The results show that this perspective is able to distinguish different components and actor roles integrated in a complex climate change discourse. After an introduction about language use in the climate debate, a short overview of the notion of narrative in a text theoretical approach is presented. The main inspiration for the theoretical and methodological narrative framework is Jean-Michel Adam's research on narrative sequences, combined with some aspects from the Narrative Policy Framework (NPF) developed by Michael Jones and colleagues. Then some case studies illustrate the use of the narrative perspective on climate change discourse of various genres: United Nations reports, Summaries for policymakers in reports from the Intergovernmental Panel on Climate Change (IPCC), Green and White papers (South Africa, Norway) and survey discourse. In parts of the analysis linguistic markers of polyphony (multivoicedness) are included in the narrative analysis. In the concluding remarks the author points at the necessity of moving from the narrative macro level to a linguistic micro level in order to perceive the multivoicedness (or polyphony) of climate change discourse.

Fløttum, Kjersti, ed. *The role of language in the climate change debate*. New York: Taylor & Francis, 2017.

This volume takes a distinctive look at the climate change debate, already widely studied across a number of disciplines, by exploring the myriad linguistic and discursive perspectives and approaches at play in the climate change debate as represented in a variety of genres. The book focuses on key linguistic themes, including linguistic polyphony, lexical choices, metaphors, narration, and framing, and uses examples from diverse forms of media, including scientific documents, policy reports, op-eds, and blogs, to shed light on how information and knowledge on climate change can be represented, disseminated, and interpreted and in turn, how they can inform further discussion and debate. Featuring contributions from a global team of researchers and drawing on a broad array of linguistic approaches, this collection offers an extensive overview of the role of language in the climate change debate for graduate students, researchers, and scholars in applied linguistics, environmental communication, discourse analysis, political science, climatology,

and media studies.

Fløttum, Kjersti, and Tonje J Espeland. "Norske klimanarrativer–hvor mange "fortellinger"? En lingvistisk og diskursiv analyse av to norske stortingsmeldinger." *Sakprosa* 6, no. 4 (2014): 1–18.

Denne artikkelen undersøker hvordan klimafenomenet presenteres i to norske stortingsmeldinger: Norsk klimapolitikk og Nordområdene. Visjon og virkemidler (2011–2012). Vitenskapelige så vel som politiske fremstillinger av klimaendringer påvirker individuelle og kollektive holdninger og meninger. Klimakommunikasjon har i det siste tiåret derfor fått mye oppmerksomhet i et voksende antall publikasjoner som studerer ulike språklige og diskursive sider av språkbruken om klima. Målet med denne artikkelen er å bidra til dette feltet gjennom en analyse basert på et teoretisk rammeverk som inkluderer narrative og polyfoniske (flerstemmige) perspektiver. Norge er en stor olje- og gassprodusent samtidig som landet er anerkjent som ledende i miljøspørsmål. Disse ulike rollene reflekteres i landets politikk. Resultatene av analysen avdekker konkurrerende "stemmer" i de to dokumentene. Dette reiser spørsmålet om hvilken innvirkning motstridende klimaperspektiver har på folks meninger og adferd.

This article explores how climate change is framed in the Norwegian White Papers on Climate Policy and on the High North (2011–2012). Scientific as well as political representations of climate change influence individual attitudes and public opinion; thus, climate change communication has become increasingly salient in recent years. In line with this, a growing number of studies focusing on various linguistic and discursive matters of climate change communication have been published. The present paper aims at contributing to this field through an analysis based on a theoretical framework comprising approaches of narrative and polyphonic (multi-voiced) perspectives. Norway is a large oil and gas provider and the country also has a reputation as leading in environmental issues. These conflicting roles are reflected in the country's policies. The analysis uncovers competing "voices" in the two documents. These findings raise the question of what impact conflicting frames have on public opinion and behaviour.

Fløttum, Kjersti, and Øyvind Gjerstad. "Narratives in climate change discourse." *Wiley Interdisciplinary Reviews: Climate Change* 8, no. 1 (2017): e429.

'Stories' used to communicate climate change knowledge shape opinions and preferences, and analyzing such narratives can help explain how they are constructed and how they influence us on personal and societal scales. The narrative perspective makes it possible to identify the presence or absence of typical components in a 'story,' such as initial situation, complication, reaction(s), resolution, and final situation, and to identify different actors or narrative characters (heroes, villains, victims). This article reviews the notions of narratives and frames, describes narrative analysis generally and more specifically how a text linguistic perspective can benefit from and contribute to the Narrative Policy Framework in narrative analysis. It illustrates how different approaches can be applied as analytical tools to explore the effects of conflicting narratives (frames) on public opinion of and attitudes towards climate change. Applied to various text genres, the analysis identifies different components of the 'stories,' at overarching levels of the text as a whole and at microlevels such as sentences. This may have rhetorical implications, as controversial points of view can be hidden from critical assessment through the condensation of narrative components into short expressions. When exposed to conflicting 'stories,' people get a diverse picture of climate change, a diversity which may, however, also lead to confusion about how to react. Concerning the narrative characters, recent research indicates that a clear hero role has a large persuasive impact. More experiments testing how people interpret various narratives should be undertaken in an interdisciplinary perspective, combining social science, and linguistic approaches.

Foltz, Richard C [1961-]. "Islamic environmentalism: A matter of interpretation," In *Islam and ecology: a bestowed trust*, edited by Richard C [1961-] Foltz, Frederick Mathewson Denny, and Azizan Baharuddin, 249–79. Cambridge, MA: Harvard University Press, 2003.

Foltz, Richard C [1961-]. "Islam," In *The Oxford Handbook of Religion and Ecology*, Oxford: Oxford University Press, 2006.

If religions are understood to be the major source of value systems by which individuals and societies rank possible outcomes and make decisions about their own behaviors, it would seem that the adoption of a caring and non-exploitative ethic toward the environment by Muslims would presuppose the existence in Islamic

tradition of principles which accord value to the natural world. This essay shows that such principles are indeed to be found in Islam and discusses some of the ways that contemporary Muslims throughout the world are seeking to apply these principles in response to the global environmental crisis. It also points out some of the cultural and political obstacles facing those who would implement Islamic guidelines for preserving the environment. In addition, the article examines sources of Islamic environmentalism, the two-edged sword of development and economic growth, and Islamic environmental ethics.

Ford, James D, Lea Berrang-Ford, Anna Bunce, Courtney McKay, Maya Irwin, and Tristan Pearce. "The status of climate change adaptation in Africa and Asia." *Regional Environmental Change* 15, no. 5 (2015): 801–14.

Adaptation is a key component of climate policy, yet we have limited and fragmented understanding of if and how adaptation is currently taking place. In this paper, we document and characterize the current status of adaptation in 47 vulnerable 'hotspot' nations in Asia and Africa, based on a systematic review of the peer-reviewed and grey literature, as well as policy documents, to extract evidence of adaptation initiatives. In total, 100 peer-reviewed articles, 161 grey literature documents, and 27 United Nations Framework Convention on Climate Change National Communications were reviewed, constituting 760 adaptation initiatives. Results indicate a significant increase in reported adaptations since 2006. Adaptations are primarily being reported from African and low-income countries, particularly those nations receiving adaptation funds, involve a combination of groundwork and more concrete adaptations to reduce vulnerability, and are primarily being driven by national governments, NGOs, and international institutions, with minimal involvement of lower levels of government or collaboration across nations. Gaps in our knowledge of adaptation policy and practice are particularly notable in North Africa and Central Asia, and there is limited evidence of adaptation initiatives being targeted at vulnerable populations including socioeconomically disadvantaged populations, children, indigenous peoples, and the elderly.

Fritzsche, Kerstin, Driss Zejli, and Dennis Tänzler. "The relevance of global energy governance for Arab countries: The case of Morocco." *Energy Policy* 39, no. 8 (2011): 4497–506.

Global climate and energy governance have led to the creation of a wide range of international and regional institutions, initiatives and financial mechanisms dedicated to fostering renewable energies. Furthermore, a low-carbon economy has evolved in recent years. The objective of this paper is to assess the potential benefits and merits of these institutions, initiatives and mechanisms from the perspective of the Middle East and North Africa (MENA) region. The central questions are if and how these organizations, initiatives and finance mechanisms could support a country from MENA in its efforts to implement large-scale capacities for renewable energy production. For this purpose, Morocco was chosen as a case study. The findings in this paper indicate that the existing institutions and financial mechanisms do not sum up to a coordinated governance approach, although the main needs of a country or region appear to be addressed. The existing institutions and financial mechanisms vary significantly in their ability to support countries, especially those taking the lead in renewable energy implementation.

Gabrielson, Teena. "Green citizenship: a review and critique." *Citizenship studies* 12, no. 4 (2008): 429–46.

This paper reviews the literature on green citizenship and argues that the concept of citizenship has done much to advance green theory building internally but that in order to deepen an already substantial area of scholarship, promote a more inclusive and emancipatory environmental politics, and augment their contribution to the larger body of citizenship studies, greens will need to broaden their approach to the concept. This review highlights the tendency within green theorizing to privilege particular conceptions of the natural world and humans' relations to it, and draws attention to the work of those scholars explicitly engaged in incorporating the social construction of nature into their theories of green citizenship. The essay concludes by identifying three particular areas in which green theorizing has contributed to citizenship studies.

Gholipour, Hassan F, Farzanegan, Mohammad Reza, and Javadian, Mostafa. "Air pollution and internal migration: evidence from Iranian household survey." *CESifo Working Paper* 8107 (2020): 21, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3541456.

The purpose of this study is to examine the impact of air pollution (measured by satellite data of Aerosol Optical Depth (AOD)) on net outmigration. Using data

from the 2011 and 2016 National Population and Housing Censuses for 31 provinces of Iran and applying a panel fixed effects estimation method, our results show that AOD has a positive and significant impact on net outmigration. We also find that higher levels of economic activities in provinces discourage outmigration.

Goursi, Umer Hafeez, Malik Rapaie, and Abid Mehmood. "Conserving the hidden nature: An overview on conservation efforts in United Arab Emirates (UAE)." *Annual Research & Review in Biology* 7, no. 6 (2015):

The aim of the study is to document the threats faced by reptiles with other species in UAE and the conservation efforts done by Barari Forest Management (BFM). The study was conducted by reviewing the factors affecting the existing wildlife in 34 different sites under Barari Forest Management in the Emirate of Abu Dhabi, United Arab Emirates from March to July, 2014. The data was collected using a combination of methods which included participatory observations and group discussions with local community including the residents, farmers, foresters, wildlife rangers / staff and field workers. The findings/ results of the study indicate that the major threats faced by existing herpeto-fauna and other associated wildlife in the study area were off road driving (25%) followed by desert safari (19%), human habitation (16%), illegal poaching (13%), human interaction (11%), habitat degradation (9%) and disturbance (7%). Majority of people (44.80%) believed that off road driving and desert safari are the most common threats to these reptiles and other wildlife, whereas 32.20% people thought that human interference and illegal poaching are the main cause of threats to reptiles and mammals, while 23% people didn't know about the threats to herpeto-fauna. According to our findings 89.20% people liked wildlife including reptiles and mammals whereas, 10.80% respondents were indecisive and did not show much interest.

Grayson, Catherine-Lune. *When rain turns to dust: Understanding and responding to the combined impact of armed conflicts and the climate and environment crisis on people's lives*. Genève: ICRC, 2000.

Countries affected by armed conflict are disproportionately vulnerable to climate variability and change, because the adaptive capacity of people, systems and institutions already coping with the consequences of conflict tend to be limited. This report is based on research conducted in southern Iraq, northern Mali, and the

interior of the Central African Republic. It draws on the expertise of the International Committee of the Red Cross (ICRC), and on the literature on the subject, to explore how people experience conflict and climate risks in combination, and how they cope and adapt. It discusses what the ICRC, and the humanitarian sector as a whole, must do to address these risks and makes an urgent call for strengthening climate action and finance in conflict-affected countries.

GreenArea. “الكويت أطلقت حملة “محو أمية تغير المناخ”. 2017.

Kuwait Launch ‘Climate Change Literacy’ Campaign

Greenwood, Scott. “Water insecurity, climate change and governance in the Arab world.” *Middle East Policy* 21, no. 2 (2014): 140–56.

The Middle East has been among the most arid regions of the globe for several thousand years. Nevertheless, recent extreme events portend a significant decline in the region’s available water resources and a meaningful change in its climate. In 1992, centuries-old underground springs feeding the Azraq wetlands in Jordan stopped flowing entirely. In the years since, similarly age-old springs in other parts of Jordan, including Jerash and Kerak, have also stopped flowing. During the 1990s, the Khabour River in Syria, a major tributary of ...

Greenwood, Scott. “MENA to 2025—Climate Change, Food, and Water Scarcity: Future Challenges,” In *The Future of Regional Security in the Middle East: Expert Perspectives on Coming Developments*, edited by Erika Holmquist, and John Rydqvist, 56–67. Stockholm: Försvarsdepartementet, 2016.

Looking towards 2025, Middle Eastern and North African states are very vulnerable to the effects of climate change and spikes in global food prices caused by world population growth, speculation in global commodity markets, and extreme weather events that disrupt regional and world agricultural production. Longer summers and shorter and drier winters, in combination with rapid population growth (due to both natural growth and the migration of refugees from conflicts in Libya, Syria, Iraq, and Yemen), will increase pressure on already over-stressed surface and groundwater supplies across the region. In addition, lower agricultural yields associated with climate change and rising world food prices will mean growing food

import bills for MENA governments, with particularly negative consequences for oil-poor countries. MENA governments, in concert with the international community, should take decisive measures to encourage greater water conservation in urban and rural areas, particularly with irrigated agriculture. The current regional emphasis on “supply-side” measures that extract greater and greater amounts of water from surface and groundwater resources is unsustainable. This is particularly true for groundwater, as the extraction of this resource at rates that greatly exceed the rate of natural renewal will continue to exhaust and pollute wells in agricultural areas. Without adequate water supplies, local economies and ecosystems will be devastated, forcing rural residents to migrate to cities, where unemployment, underemployment, and poverty levels are already high. In sum, without bold and decisive action to manage scarce water supplies more effectively and sustainably, water and food insecurity will pose significant threats to the domestic and external security of many MENA states, especially Yemen, Jordan, Syria, Iraq, and Israel.

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Guerin, Adam. “Disaster ecologies: Land, peoples and the colonial modern in the Gharb, Morocco, 1911-1936.” *Journal of the Economic and Social History of the Orient* 59, no. 3 (2016): 333–65.

This article investigates the place of communal land and migratory populations in the colonial modernization projects of the Gharb, Morocco. A combination of ethnoenvironmental myth and an unerring faith in European-style private property played a preponderant role in shaping rural reform. Bound by international law to uphold “traditional” forms of communal, migratory life, French policy-makers instead transformed the land and juridical cultures that gave such social practices meaning. The resulting “disaster ecologies” of the Gharb - and their devastating human and environmental consequences - were not accidental but central to the realization of a particular brand of colonial modernity in Morocco.

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Günel, Gökçe. “The Infinity of water: Climate change adaptation in the Arabian Peninsula.” *Public Culture* 28, no. 2 (2016): 291–315.

This article examines the discourses and practices of climate change adaptation in the Arabian Peninsula. It suggests that climate change adaptation projects in the region are often attempts at reframing water-related challenges that are already present, regardless of the effects of climate change. For instance, the groundwater sources in the United Arab Emirates (UAE) will be destroyed not

necessarily due to the predicted impacts of climate change but because they will soon be completely consumed. In response, the governments in the Arabian Peninsula, especially the UAE, advance a view that I call the “infinity of water,” by relying on technological solutions, particularly desalination. The nonconventional synthetic quality of water, where more can be generated through desalination whenever necessary, allows the actors in the area to envision and embrace its infinity, regardless of existing and impending water scarcity. This article shows how water ceases to be a “natural” entity, but rather emerges as an assemblage of complex technical procedures, social relations, and historical trajectories.

Günel, Gökçe. *Spaceship in the Desert: Energy, Climate Change, and Urban Design in Abu Dhabi (Experimental Futures)*. Duke University Press Books, 2019.

In 2006 Abu Dhabi launched an ambitious project to construct the world’s first zero-carbon city: Masdar City. In *Spaceship in the Desert* Gökçe Günel examines the development and construction of Masdar City’s renewable energy and clean technology infrastructures, providing an illuminating portrait of an international group of engineers, designers, and students who attempted to build a post-oil future in Abu Dhabi. While many of Masdar’s initiatives—such as developing a new energy currency and a driverless rapid transit network—have stalled or not met expectations, Günel analyzes how these initiatives contributed to rendering the future a thinly disguised version of the fossil-fueled present. *Spaceship in the Desert* tells the story of Masdar, at once a “utopia” sponsored by the Emirati government, and a well-resourced company involving different actors who participated in the project, each with their own agendas and desires.

Gupta, Joyeeta. “International law and climate change: The challenges facing developing countries.” *Yearbook of International Environmental Law* 16, no. 1 (2005): 119–53.

The climate change problem poses the most dramatic challenges to international law in the twenty-first century because the underlying science is highly uncertain, because the distribution of costs and benefits is globally uneven and unpredictable, and because it raises key questions regarding how responsibilities between countries should be shared. ¹ The problem needs to be addressed not only in accordance with internationally accepted processes but also in accordance with substantive norms if the 1992 United Nations Framework Convention on Climate

Change 2 (UNFCCC) and its follow-up decisions and protocols (the climate treaties) are to survive well into the new century. The ongoing negotiations within the UNFCCC process have been complicated enough without the new challenges that have emerged in the last year. On the one hand, we have the UNFCCC, which binds 189 countries worldwide, and the 1997 Kyoto Protocol, 3 which binds 158 countries. On the other hand, we have the 2006 Asia-Pacific Partnership for Clean Development and Climate, an agreement involving the world's six largest polluting countries. 4 This is the latest in a series of international initiatives taken outside the UNFCCC regime. Furthermore, the rise of climate litigation and the enhanced role of the private sector in solving climate change have implications for developing countries. This article examines the existing and potential challenges for developing countries and from their perspective. It clarifies who the developing countries are for the purpose of the negotiations, especially in light of the "common but differentiated responsibility" (CBDR) principle (see section II in this article).

Haddad, Eduardo A, Nadim Farajalla, Marina Camargo, Ricardo L Lopes, and Flavio V Vieira. "Climate change in Lebanon: Higher-order regional impacts from agriculture." *Region: The Journal of ERS* 1, no. 1 (2014): 9–24.

In this paper, we analyze the susceptibility of agricultural outputs to future climate change in Lebanon, and the extent to which it propagates to the economic system as a whole. We use a methodological framework in which physical and economic models are integrated for assessing the higher-order economic impacts of projected climate changes. By using this integrated modeling approach, we are able to quantify the broader economic impacts in the country by considering not only the temporal dimension but also the regional disaggregation of the results. Our estimates suggest that there are high potential costs and risks associated with a burden to the poorer and more vulnerable regions of the country.

Hajer, Maarten A., and Wytse Versteeg. "A decade of discourse analysis of environmental politics: achievements, challenges, perspectives." *Journal of Environmental Policy and Planning* 7, no. 3 (2005): 175–84.

This article assesses the contribution of discourse analysis to the study of environmental politics over the period of the past decade. Defining discourse as a particular linguistic regularity that can be found in conversations distinguishes it from 'deliberation' and 'discussion'. Discourse analysis is seen as focused on

situational logics studying 'language-in-use'. Three strengths of discourse analysis are highlighted: its capacity to reveal the role of language in politics, its capacity to reveal the embeddedness of language in practices and its capacity to answer 'how' questions and to illuminate mechanisms. The article concludes by sketching some of the challenges lying ahead of discourse analysis. Given the changing nature of policy making, discourse analysts are supposed to have a task in identifying the new sites of politics and analysing the political dynamics therein.

Hamouchene, Hamza. "The Ouarzazate solar plant in Morocco: Triumphal 'green' capitalism and the privatization of nature." *Jadaliyya* (2016):

A en croire le discours du makhzen (terme qui renvoie au roi et à l'élite qui l'entoure), repris sans nuance ni réflexion critique par la plupart des médias de la région et du monde occidental, ce projet serait une excellente nouvelle et un grand pas vers la réduction des émissions de carbone et la lutte contre le réchauffement climatique. Il y a pourtant place pour un certain scepticisme. Les annonces officielles d'un accord « historique » lors de la COP 21 à Paris sont un exemple de ce genre de propos trompeurs.

Hansen, Anders, and Robert Cox. *The Routledge handbook of environment and communication*. Routledge, 2015.

This Handbook provides a comprehensive statement and reference point for theory, research and practice with regard to environment and communication, and it does this from a perspective which is both international and multi-disciplinary in scope. Offering comprehensive critical reviews of the history and state of the art of research into the key dimensions of environmental communication, the chapters of this handbook together demonstrate the strengths of multi-disciplinary and cross-disciplinary approaches to understanding the centrality of communication to how the environment is constructed, and indeed contested, socially, politically and culturally. Organised in five thematic sections, The Routledge Handbook of Environment and Communication includes contributions from internationally recognised leaders in the field. The first section looks at the history and development of the discipline from a range of theoretical perspectives. Section two considers the sources, communicators and media professionals involved in producing environmental communication. Section three examines research on news, entertainment media and cultural representations of the environment. The fourth

section looks at the social and political implications of environmental communication, with the final section discussing likely future trajectories for the field. The first reference Handbook to offer a state of the art comprehensive overview of the emerging field of environmental communication research, this authoritative text is a must for scholars of environmental communication across a range of disciplines, including environmental studies, media and communication studies, cultural studies and related disciplines.

Heger, Martin, and Maria Sarraf. *Air pollution in Tehran: health costs, sources, and policies*. Washington, DC: World Bank, 2018.

Tehran, the capital of the Islamic Republic of Iran (IRI), is located in the north of the country with a population of about 8.5 million. The population can reach over 12.5 million during the day, with people from nearby cities commuting daily to Tehran for work. There are more than 17 million vehicular trips per day in Tehran, and many of the vehicles have outdated technology. Thus, the air in Tehran is amongst the most polluted in the world. Topography and climate add to the pollution problem. Tehran is at a high altitude and is surrounded by the Alborz Mountain Range, which traps polluted air. Temperature inversion, a phenomenon particularly occurring during the winter months, prevents the pollutants from being diluted. Several recent trends indicate that reducing air pollution will not be straight forward: rapid population growth (partially due to migration from other cities), industrial development, urbanization, and increasing fuel consumption are pressure points for clean air in Tehran. To design an effective approach to air pollution management, it is important to diagnose the problem, determine its sources, and identify affordable and sustainable solutions. This discussion paper provides an overview of the seriousness of air pollution in the city of Tehran; quantifies its impact in terms of health and economic costs; identifies the sources of pollution; and, finally, provides a framework to address the problem.

Heimbach, Marfa. "Grundsteinlegung für den ersten Euphrat-Staudamm in der Türkei." *WDR ZeitZeichen* (2021): <https://www1.wdr.de/mediathek/audio/zeitzeichen/audio-grundsteinlegung-fuer-den-ersten-euphrat-staudamm-in-der-tuerkei-100.html>.

Das Land zwischen Euphrat und Tigris war zu biblischen Zeiten das Paradies - der Garten Eden - das Zweistromland. Die Quellen beider Flüsse liegen in der

heutigen Türkei, von dort durchfließen die berühmten Ströme Syrien und den Irak, vereinigen sich schließlich zum Schatt al-Arab und münden in den Persischen Golf.

Hergersberg, Peter. "Hot air in the Orient." *Max Planck Research* 2016, no. 4 (2016): 62–68.

The Middle East and North Africa are currently being rocked by armed conflicts and political crises. But even if these were to be resolved, many people there will likely be forced to leave their homes in the coming decades. Jos Lelieveld, Director at the Max Planck Institute for Chemistry in Mainz, and his colleagues are predicting that the region will see dramatic climate change and an increase in air pollution, including airborne desert dust.

Hilmi, Hind Abbas, and Organization for Social Science Research in Eastern and Southern Africa. *The perception of environment by rural women in the Sudan: case study of three villages in the Gezira area/central Sudan*. [Addis Ababa]: Organization for Social Science Research in Eastern Africa (OSSREA), 1997.

Hjort af Ornäs, Anders, and Mohamed Ahmed Mohamed Salih, eds. *Ecology and politics: Environmental stress and security in Africa*. Uppsala: Scandinavian Institute of African Studies, 1989.

Hochberg, Michael. *Renewable energy growth in Morocco: an example for the region*. Washington, DC: Middle East Institute, 2016.

Morocco is paving the way in the Middle East and North Africa with its national adoption of a renewable energy plan. Utilizing government sponsored programs to link private renewable suppliers with the larger power grid, solar and wind power have transformed from cottage industries to the heart of the country's long-term economic plan. While Morocco has looked both outwardly and domestically to develop its energy infrastructure, the next challenge will be to fully integrate renewables in a way that promotes local involvement and sustainability. If

proven successful, such a program could encourage a wider acceptance and use of renewable energy throughout the region.

Key Points

- ◆ Morocco's renewable energy goals are the most ambitious in the region, and could potentially provide infrastructural examples for other Middle East states
- ◆ Industrialization and a lack of readily available hydrocarbons has created the need for reliable alternative energy sources in Morocco, such as solar power and wind power
- ◆ Government policies allow for private entities to integrate solar and wind power into existing energy grids, and remain competitive with larger firms
- ◆ The renewable energy sector in Morocco is developing in a way that emphasizes local development, information sharing, and direct involvement
- ◆ Morocco has accomplished overhauling older institutional energy frameworks, and now faces the challenge of equipping local communities to utilize renewable energy sources to grow the industry throughout the country

Hoffmann, Clemens. "Environmental determinism as Orientalism: The geo-political ecology of crisis in the Middle East." *Journal of Historical Sociology* 31, no. 1 (2018): 94–104.

From 'Resource Curse' to 'Climate Conflict', more and more analyses of the current crisis in the Middle East start their reasoning from geo-physical or natural conditions as determinants of social life. Paradoxically, despite its resource riches giving rise to conflict, the region's ecology is portrayed as fragile, alien and hostile. This imperial oriental imagination, assumes that a scarce nature is mismanaged by societies and states overall incapable of negotiating modernity. This precarious, crisis driven environment is now pushed to the edge by the effects of climate change with looming desertification and weather extremes and a scramble for shrinking oil reserves threatening to make the region all but inhabitable. This article suggests that this environmental oriental determinism in Middle East can be overcome by entering political ecology into the register of historical sociological analysis. Re-socialising and historicising nature-society relations avoids reifying the Cartesian nature/society divide, offering historical sociology a better toolkit to navigate the current crisis. Vice-

versa, it argues that political ecology can benefit from recognising the role of geopolitical relations in the social reproduction nature.

Hosseini, Vahid, and Hossein Shahbazi. "Urban air pollution in Iran." *Iranian Studies* 49, no. 6 (2016): 1029–46.

Urban air pollution is a major health risk in several large Iranian cities. Transportation, extensive use of fossil fuels, outdated urban fleets of gasoline and diesel vehicles, industrial sources within and close to the city boundaries and natural dust are major contributing factors. Starting with Tehran, emission inventories and mathematical air pollution models are being developed. Air quality is being monitored and reported to the public, though data availability and validity remain a challenge. While national and local air pollution mitigation plans are in place, progress remains slow, coordination is weak, and sources of funding are limited.

Hurlstone, Mark J, Stephan Lewandowsky, Ben R Newell, and Brittany Sewell. "The effect of framing and normative messages in building support for climate policies." *PloS One* 9, no. 12 (2014): e114335.

Deep cuts in greenhouse gas emissions are required to mitigate climate change. However, there is low willingness amongst the public to prioritise climate policies for reducing emissions. Here we show that the extent to which Australians are prepared to reduce their country's CO₂ emissions is greater when the costs to future national income are framed as a "foregone-gain"—incomes rise in the future but not by as much as in the absence of emission cuts—rather than as a "loss"—incomes decrease relative to the baseline expected future levels (Studies 1 & 2). The provision of a normative message identifying Australia as one of the world's largest CO₂ emitters did not increase the amount by which individuals were prepared to reduce emissions (Study 1), whereas a normative message revealing the emission policy preferences of other Australians did (Study 2). The results suggest that framing the costs of reducing emissions as a smaller increase in future income and communicating normative information about others' emission policy preferences are effective methods for leveraging public support for emission cuts.

Irani, Alexandra, and Ali Chalak. *Harnessing motorists' potential demand for hybrid-electric vehicles in Lebanon: Policy options, CO₂ emissions reduction and welfare gains.*

Beirut: Issam Fares Institute for Public Policy and International Affairs, American University of Beirut, 2015.

Air quality degradation is closely linked to the transportation sector in the Arab region. In Lebanon's capital, Beirut, levels of many transport-related pollutants are several times higher than world norms. In this paper, we elicit motorists' propensity to purchase hybrid-electric vehicles (HEVs) in Beirut by means of a choice experiment, and monetize attendant financial, welfare and environmental benefits. Simulations of aggregate switching behavior revealed that under a transitional scenario which assumes that HEVs are exempt from ...

Isenberg, Andrew C., ed. *The Oxford Handbook of environmental history*. Oxford: Oxford University Press, 2014.

The field of environmental history emerged just decades ago but has established itself as one of the most innovative and important new approaches to history, one that bridges the human and natural world, the humanities and the sciences. With the current trend towards internationalizing history, environmental history is perhaps the quintessential approach to studying subjects outside the nation-state model, with pollution, global warming, and other issues affecting the earth not stopping at national borders. With 25 essays, this Handbook is global in scope and innovative in organization, looking at the field thematically through such categories as climate, disease, oceans, the body, energy, consumerism, and international relations.

Jamil, M., Farzana Ahmad, and Y.J. Jeon. "Renewable energy technologies adopted by the UAE: Prospects and challenges – A comprehensive overview." *Renewable and Sustainable Energy Reviews* 55 (2016): 1181–94.

The United Arab Emirates (UAE) is an oil-rich country which is located in the eastern part of the Arabian Gulf. The country is considered among the highest energy consumer in the world. Likewise of the other GCC countries, UAE's economy mainly depends on the oil, gas and other fossil fuels. In the recent timings, with a continuous increase in UAE's population require further demand in its energy production which is essential for its economic growth. However as the fossil fuels are limited sources, consequently additional sustainable and renewable energy (RE) resources are necessary to be explored. In this context, the UAE is considering alternative RE

resources to overcome such issues as well as to reduce environmental pollution and its carbon emission. The present work addresses the issues and challenges related with the RE resources technologies, in the scenario of UAE. The possible current, RE resources choices for UAE and potential future prospects of such technologies are mentioned. Further at the present timings, renewable energy resources such as photovoltaic energy, concentrated solar power, wave energy and fuel cell energy etc., which UAE's is mainly focusing are reviewed. Similarly the past and ongoing research work conducted on such technologies has been also discussed. It is expected that by exploring RE technologies, with proper utilization and with better planning these renewable energy sources will provide a suitable solution for the UAE's energy, economy and environmental issues.

Johnstone, Sarah, and Jeffrey Mazo. "Global warming and the Arab Spring." *Survival* 53, no. 2 (2011): 11–17.

Was climate change one of the causes of the wave of popular protests and uprisings that has swept the Arab countries of North Africa and the Middle East since January? At first blush, the question looks absurd. Surely myriad long- and short-term social, economic, political and religious drivers of anger and dissent are the obvious causes. But in fact the recent events offer a textbook example of what analysts mean when they talk of complex causality and the role of climate change as a 'threat multiplier'. The wave of protests, feeding on one another, might have broken at any time over the last few decades. Why did it happen now? Many different sets of events and circumstances might have been sufficient to set it off. Any particular set would have been unnecessary, since another could have sufficed. But in the chain of events that did lead to today's revolutions, climate change played a necessary role, even if it was obviously an insufficient trigger on its own. A proximate factor behind the unrest was a spike in global food crises, which in turn was due in part to the extreme weather throughout the globe over the past year. This was not enough to trigger regime change – we have seen food price spikes and food riots before – but it was a necessary part of this particular mix. Demonstrators waving baguettes on the streets of Tunisia, Jordan and Yemen had already provided an illustration of the problem when the United Nations' food agency declared on 3 March that global food prices were at a new all-time high. The cost of wheat has been climbing since summer 2010, when drought and bushfires laid waste to crops in Russia, Ukraine and Kazakhstan, all leading exporters; the prices of sugar, maize, soybeans and vegetable oils have also been rising.

Katsaris, Angelos, [Άγγελος Κατσαρής]. “Europeanization through policy networks in the southern neighbourhood: advancing renewable energy rules in Morocco and Algeria.” *JCMS: Journal of Common Market Studies* 54, no. 3 (2016): 656–73.

This research contributes to the literatures of Europeanization and European public administration by investigating EU rule advancement outside Europe. The article argues that the European Commission requires professional networks to advance the European Union (EU) *acquis* in Morocco and Algeria regarding climate change mitigation. However, certain conditions determine its network-building efforts outside Europe. Functional interests and sectoral interdependence provide the Commission with increased bargaining power in Morocco. Thus, market access and expertise offers trigger Morocco to develop technical dialogue over renewable energies. Instead, a Commission-led technical network over renewable energies creates antagonistic relations with the Algerian state elite. An alternative energy relationship with Europe beyond conventional resources could incur revenue losses for the state and a shift towards a different economic model. As a result, state hierarchies intervene in network-building and lead professionals to stagnant outcomes. The study takes an actor-centred approach, opting for proximity in network operations.

Keen, David J. *The benefits of famine: a political economy of famine and relief in southwestern Sudan, 1983-1989*. Princeton, N.J.: Princeton University Press, 1994.

David Keen argues that famines, such as that which devastated the Dinka of Sudan in the 1980s, often have powerful beneficiaries within the affected nation, including the political elite and traders. Meanwhile, shortcomings in the manner of international intervention, while contributing to famine, may offer significant political and bureaucratic benefits for international donors. Famine is not necessarily an apocalyptic natural disaster: it may have functions as well as causes. Drawing on a range of historical information and the accounts of famine sufferers, aid providers, and government officials, Keen explains the causes of the Sudanese famine, extracting vital lessons about the future of effective famine relief. Identifying those Sudanese interests that actively promoted famine and obstructed relief, Keen shows how the assets of the politically powerless Dinka were forcibly transferred to beneficiary groups. In a sense, and contrary to the emphasis of Amartya Sen, it was the Dinkas' wealth, rather than their poverty, which exposed them to famine in a context where they lacked political redress against exploitation. For the most part,

international donors failed to counteract the processes leading to famine or to speak up on behalf of those who lacked political influence in their own society. At a time when the effectiveness of the UN and the international community in such crises is increasingly being questioned, this work provides evidence of the flaws in current thinking about humanitarian intervention and its practice. TOC Ch. 1 Overview Ch. 2 Famine and Exploitation in Historical Perspective Ch. 3 Victims and Beneficiaries: A Case Study of Famine as a Combination of Exploitative Processes Ch. 4 The Inadequacy of Relief: A “Policy Success” for Powerful Groups in Sudan? Ch. 5 The Inadequacy of Relief: The Role of International Donors Ch. 6 Discussion and Conclusions

Keulertz, Martin, and Eckart Woertz, eds. *The Water-energy-food nexus in the Middle East and North Africa*. Abingdon-on-Thames: Routledge, 2016.

This book discusses key issues concerning water, energy and food in the Middle East and North Africa (MENA) region. It provides an interdisciplinary account of current developments in the most water-scarce and conflict-torn region in the world. Key analysts on MENA water, agriculture and energy affairs have been drawn together to compile one of the first edited volumes dedicated to the crucial role of water, energy and food security in the 21st century MENA region. It will be of interest to decision-makers, analysts and students of the future of the Middle East from a broad range of disciplines including the physical and social sciences. This book was previously published as a special issue of the *International Journal of Water Resources Development* (vol. 31(3), 2015) [UiO has access]

Table of Contents

1. The water – food – energy nexus: an introduction to nexus concepts and some conceptual and operational problems

Tony Allan, Martin Keulertz and Eckart Woertz

2. Financial challenges of the nexus: pathways for investment in water, energy and agriculture in the Arab world

Martin Keulertz and Eckart Woertz

3. Food-water security and virtual water trade in the Middle East and North Africa

Marta Antonelli and Stefania Tamea

4. Rapid assessment of the water – energy – food – climate nexus in six selected basins

of North Africa and West Asia undergoing transitions and scarcity threats

Caroline King and Hadi Jaafar

5. The nexus as a political commodity: agricultural development, water policy and elite rivalry in Egypt

Harry Verhoeven

6. Nexus meets crisis: a review of conflict, natural resources and the humanitarian response in Darfur with reference to the water – energy – food nexus

Brendan Bromwich

7. To what end? Drip irrigation and the water – energy – food nexus in Morocco
Guy Jobbins, Jack Kalpakian, Abdelouahid Chriyaa, Ahmed Legrouri and El Houssine El Mzouri

8. Virtual-water content of agricultural production and food trade balance of Tunisia

Jamel Chahed, Mustapha Besbes and Abdelkader Hamdane

9. Energy cost of irrigation policy in Morocco: a social accounting matrix assessment

Mohammed Rachid Doukkali and Caroline Lejars

10. Impact of the Syrian conflict on irrigated agriculture in the Orontes Basin
Hadi H. Jaafar, Rami Zurayk, Caroline King, Farah Ahmad and Rami Al-Outa

11. Climate change and food-water supply from Africa's drylands: local impacts and teleconnections through global commodity flows

Mark Mulligan

12. Towards a water – energy – food nexus policy: realizing the blue and green virtual water of agriculture in Jordan

Samer Talози, Yasmeen Al Sakaji and Amelia Altz-Stamm

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Khan, Muhammad Sadiq Munfath, and Zakariya Kaneesamkandi. "Biodegradable waste to biogas: renewable energy option for the Kingdom of Saudi Arabia." *International Journal of Innovation and Applied Studies* 4, no. 1 (2013): 101–13.

Energy recovery from waste is not a new field of study, but its implementation continues to be a challenge in some Arab countries. Although there is abundance of useful waste in the urban markets, practices aiming at waste to energy conversion are still negligible. In the kingdom of Saudi Arabia, so-called green markets are abundant with renewable energy potential, but the practical implementation of this potential is missing. Therefore the objective of this paper is the evaluation of waste generation in KSA for the energy recovery purpose, and to show that the conversion of green waste into biofuel is not only environmentally friendly but also financially rewarding. Since the result illustrate that the major portion of the waste generated is organic waste, anaerobic digestion is proposed waste to energy technology because of its feasibility for biodegradation of moist organic wastes into biogas. Diversion of waste into biogas and bio-fertilizer will ensure that it is treated in such a way that it becomes a useful product instead of harmful one. Furthermore as the policy makers and planners in renewable energy sector have intended for kingdom of Saudi Arabia to be "kingdom of sustainable energy" as well, hence they are needed to give special attention toward the largest Saudi Arabia's green market and should invest more to implement this plan.

King, Marcus D. "Dying for a drink." *American Scientist* 107, no. 5 (2019): 296–296.

Overuse, population growth, and climate change are turning water into a powerful tool for conflict in many parts of the world. Starting in 2007, the Middle East plunged into the most severe drought since scientists began keeping records there in the 1930s. For three years, rainfall was far below normal. Up to 1.5 million Syrians abandoned parched farmlands and migrated to urban areas, bringing new social and political stresses with them. Low crop yields also led to widespread food shortages. Those factors by themselves did not cause the 2011 Syrian civil war, but they contributed significantly to the conditions that set it off. Water figured prominently in the subsequent violence too, as insurgent forces used water supplies and access as weapons of war.

Knudsen, Ståle. "Protests against energy projects in Turkey: Environmental activism above politics." *British Journal of Middle Eastern Studies* 43, no. 3 (2016): 302–23.

The surge of environmental protest in Turkey has been interpreted as ‘above politics’ activism that strengthens civil society, fosters alternative expressions of identity, and creates new forms of agency outside the state. This article contends that any analysis of the way environmentalism unfolds in Turkey must take into account identity dynamics and the power the state has over these dynamics. Environmental activism seldom remains purely ‘issue-based’, despite the claims and desires of many activists themselves that their protests be ‘above politics’ as a ‘people’s movement’. Drawing on ethnographic and other methods in the study of environmental protest against a gas power plant on the Black Sea coast, this article shows how activists are caught in a dilemma which forces them to tread very carefully if they are to avoid accusations of being separatists or betrayers of the fatherland. Thus, environmental conflicts in Turkey can only be understood within the context of national identity- and party-politics.

Knudsen, Ståle, and Olav Aanestad. “Naturressurser og miljøproblemer i midtøsten.” *Babylon – Tidsskrift om Midtøsten og Nord-Afrika* 0, no. 2 (2007): 10–22.

Landskap og økosystemer i Midtøsten har blitt formet i kontinuerlig samspill mellom vann, land, vegetasjon og mennesker over flere tusen år. Heller enn “uberørt” og “vill” natur, er det gjerne Edens have, stelt og skapt av mennesker, som best symboliserer den ideelle naturforvaltning i Midtøsten. Men modernisering, konflikter og kriger samt feilet forvaltning har skapt større miljøutfordringer enn de fleste er klar over. Det er derfor bemerkelsesverdig hvor lite oppmerksomhet slike tema får i internasjonale media og i kademia.

Koehrsen, Jens. “Muslim NGOs and the quest for environmental sustainability in the context of the sustainable development goals,” In *Does religion make a difference? Religious NGOs in international development collaboration*, edited by Andreas Heuser, and Jens Koehrsen, 327–48. Baden-Baden: Nomos, 2020.

Religious NGOs have become a bearer of hope in the field of development. However, it is not clear how these actors relate to the newly established Sustainable Development Goals (SDGs). The new emphasis on environmental sustainability in the SDGs, combined with strong academic claims about the importance of religion for tackling environmental problems, raise the question of how religious NGOs relate to environmental sustainability and in what way they can engage in it. This

contribution addresses the role of Muslim NGOs. Reviewing different contributions to the subject, it provides an overview of the potentials and challenges of these organisations in the struggle for environmental sustainability. It thereby addresses the question in what way Muslim NGOs can make a difference in transformation processes towards environmentally friendly societies. The article shows that studies about this subject frequently outline the environmental teachings of Islam and its grassroots reach as crucial resources. However, studies also indicate that the impact of Islamic environmental initiatives on broader Muslim populations remains unclear and that these initiatives may suffer from low acceptance at the grassroots level.

The remainder of this article is as follows: The second section addresses the debate about religion and ecology while the third section turns to the challenges of Muslim NGOs in the field of international development. The fourth section portrays different studies about Muslim environmental activism. Based on these insights, the following section recapitulates the main observations and compares the resources as well as limitations of Muslim organisations in promoting environmental sustainability. The article ends with a conclusion summarizing the results and sketching potential avenues for research.

Abstract of the book:

Religions are increasingly being regarded as relevant partners in international development cooperation due to their special attributes. However, to date there has been little research into what the special attributes of religious development agencies actually are or how such organisations employ them. What resources do religious NGOs draw on in development cooperation? How do such NGOs differ from other development agencies? Does their engagement make a considerable difference to collaborative development work? Using empirical case studies and theoretical analysis, the contributions in this book address these questions. In doing so, they examine different religions and their collaborative development work in various regions of the world, and chart the most recent changes in religions.

Komendantova, Nadejda, and Masoud Yazdanpanah. "Impacts of human factors on willingness to use renewable energy sources in Iran and Morocco." *Environmental Energy and Economic Research* 1, no. 2 (2017): 141–52.

Currently Iran and Morocco are going through an energy transition. Ambitious plans exist at international, regional and national governance levels to deploy renewable energy sources (RES), such as concentrated solar power (CSP) and

photovoltaic (PV) solar power. These plans foresee deployment of RES to cover local growing energy needs, to diversify energy supply and to benefit from electricity trade. Even though the majority of MENA countries have favorable geographic conditions, namely, the level of solar irradiance, for deployment of solar projects, they are very diverse in terms of availability of fossil fuels, which might hinder deployment of RES projects. For instance, Morocco is covering almost 95% of its energy needs by imports at the same time as Iran is not only benefiting from availability of fossil fuels for local consumption but are also exporting fossil fuels to the global markets. The first question of this paper is trying to answer is how availability of fossil fuels for domestic consumption might impact the willingness of people in Iran and Morocco to use RES. And secondly how public acceptance of RES in general, and solar projects in particular effects the development of RES projects in this region. The methodological basis of this paper is formed by the case study method of two countries. It also includes different methods of elicitation of opinions and views to understand public acceptance and willingness to use renewable energy. By comparing Iran and Morocco we aim to understand to which extent availability of non-renewable energy sources in in these two countries influence perceptions of its inhabitants regarding RES energy.

). "Trashing the sectarian system? Lebanon's "You الكريدي مروان Kraidy, Marwan M (Stink" movement and the making of affective publics." *Communication and the Public* (2016):

During the summer of 2015, a garbage management crisis emerged in Beirut after Lebanon's main landfill was shut down without finding an alternative, and piles of trash grew bigger on the streets, triggering a wave of contentious politics. An activist movement emerged early during the ongoing crisis: called "You Stink," the movement is led by seasoned activists who display the usual social media savvy and artful protest tactics that echo activism in the Arab Uprisings. Based on a preliminary reading of the movement's actions and demands, and of the state's response, this article provides an exploratory analysis of the symbolic world of "You Stink," focusing on affect and the body, and proffers some initial observations on the extent to which "You Stink" may contribute insights into research on social movements.

Krane, Jim. "Stability versus sustainability: energy policy in the Gulf monarchies." *The Energy Journal* 36, no. 4 (2015): 1–21.

The six Persian Gulf monarchies are home to some of the world's largest hydrocarbon reserves, and also some of the cheapest energy prices and highest per-capita consumption. Government subsidies based on socio-political objectives have contributed to regime longevity, but they have also stimulated demand for resources comprising the region's chief export and biggest contributor to GDP. This paper finds that these monarchies – Qatar excepted – face an increasingly acute conflict between maintaining subsidies and sustaining exports. A shift to a higher-cost model of energy provision is underway. The era when primary energy was considered nearly free is being eclipsed by one where new sources of demand are met by more expensive resources. For now, governments have absorbed the increased costs. Consumers have been insulated from higher prices. This counterproductive practice only intensifies the call on exportable resources. The choice for regimes is one of short-term political stability versus longer term economic sustainability. As energy production reaches a plateau, domestic consumption will gradually displace exports. Politically difficult reforms that moderate consumption can therefore extend the longevity of exports, and perhaps, the regimes themselves.

Krane, Jim. "Political enablers of energy subsidy reform in Middle Eastern oil exporters." *Nature Energy* 3, no. 7 (2018): 547–52.

Oil-exporting states in the Middle East and North Africa have launched reforms of long-standing energy subsidies thought to comprise an important source of legitimacy for autocratic regimes. The actions challenge enduring academic assumptions of the illegitimacy of retrenchment in polities underwritten by hydrocarbon rents. Here, I argue that a series of converging trends provided political cover for the reforms, including fiscal stress from low world oil prices, escalating regional instability, international environmental pressure, as well as untenable growth in domestic consumption of exportable commodities. While the reforms signal an important shift in state–society relations, the new policies appear to be designed to update — rather than jettison — rent-based autocratic governance.

Krane, Jim. "Security amid instability: oil markets and attacks in the Persian Gulf." *Georgetown Journal of International Affairs* 21, no. 1 (2020): 120–28.

Krech III, Shepard (1944-), J R McNeill, and Carolyn Merchant, eds. *Encyclopedia of world environmental history*. London & New York: Routledge, 2004.

While the relationship between man and nature has been a constant feature of the human situation, the human impact on the environment has only recently become a topic of general interest to students, as well as to scholars and professionals in disciplines across the board. This three-volume set, written by a team of international experts, provides not only broad historical coverage on how human beliefs and actions have altered the natural world, but also covers the latest developments in the field. An analysis of natural phenomena and events and their impact on human societies is also included. For a full list of entries, contributors, and more, visit the Encyclopedia of World Environmental History website. Also includes 20 maps.

Kuwait, State of. "Intended nationally determined contributions." (2015): 1–10, <https://epa.org.kw/ClimateChange/climate5>.

In accordance with Decision 1/CP.19 and based on the information mentioned in decision 1/CP.20 which invites all parties to submit their Intended Nationally Determined Contributions for the period post-2020. Kuwait prepared and submitted this document to join the world countries the march of limiting climate change based on its sustainable development plans and programs at the national level until 2035. The State of Kuwait is seeking to adapt with the negative impacts and consequences of climate change. Also it's working towards moving to a low carbon equivalent emissions economy system based on its future business as usual emissions over the period 2020- 2030. Through its efforts to achieve developmental, environmental, social and economic priorities under the framework of sustainable development. Therefore, the State of Kuwait attaches a great importance on diversifying the sources of energy production in the country, which contributes in avoiding the increase of greenhouse gases emissions by 2035.

Kvidal-Røvik, Trine. "Nature Articulations in Norwegian Advertising Discourse: A Depoliticized Discourse of Climate Change." *Environmental Communication* 12, no. 6 (2018): 794–806.

This article deals with how nature is articulated in public discourse and more specifically how humans' relationship to nature is constructed via such articulations.

Based on critical cultural analyses of ads presented in a Norwegian context, the article claims articulations of nature serve to a depoliticization of nature, which silence social differences and reduce environmental politics to individual moral action. Several rhetorical patterns of particular relevance to the articulation of nature are discussed, pointing out how disparate, sometimes conflicting, understandings of nature are rhetorically configured and aligned in ways that benefit a global market economy. There is a discursive distancing of nature and everyday life, even as nature remains valorized and very much central to national identity. This constrains citizens' political engagement and undermines understandings of how to govern nature.

Laio, Francesco, and CWASI (Coping with water scarcity in a globalized world) project. "Water to food: Taking care of water resources in the global food system." (2021): <https://www.watertofood.org>.

Taking care of water resources in the global food system

Water To Food engages in the dissemination of the results achieved within the CWASI (Coping with water scarcity in a globalized world) project. The project, which is led by Professor Francesco Laio at Politecnico di Torino and funded by the European Research Council, pioneered the scientific research about the agricultural water consumption for food production and trade.

Lange, Manfred A. "Climate change and the water-energy nexus in the MENA region." *Orient* 61, no. 1 (2020): 16–27.

The Middle East and North Africa (MENA) region is home to some 500 million people and is characterised by strong environmental, economic, political and societal gradients. The region is expected to experience higher-than mean global changes in climatic conditions in the near future. Impacts of these changes will be particularly significant for water and energy security in many of the MENA countries. These impacts lead directly to significant issues of national and regional security. Addressing these challenges calls for integrated and holistic considerations and measures in the context of the water-energy nexus.

Lilliestam, Johan, and Anthony Patt. "Barriers, risks and policies for renewables in the Gulf States." *Energies* 8 (2015): 8263–85.

The countries of the Gulf Cooperation Council (GCC) have both large fossil fuel resources and vast renewable energy potentials. Here, we investigate in a literature meta-analysis and a survey, whether there is a need for renewables in the GCC, what barriers and risks presently deter investments, and what possible policy-solutions could be. We find that there is a long-term need for renewables, to diversify the economy and prepare for a post-fossil fuel era. In the short term, two main obstacles deter investments: inefficient bureaucracy, and the combination of fossil fuel/electricity subsidies and the absence of renewable energy support. Removing fossil fuel and consumption subsidies or introducing a support scheme could make investments in renewables profitable. Eliminating energy subsidies appears particularly beneficial to the economic outlook but this seems particularly difficult to implement, due to the political economy of rentier states. Increased bureaucratic transparency and efficiency is needed, so that potentially attractive investments can rapidly and predictably obtain the necessary permissions. Hence, the administrative and economic environment for renewable energy investments in the GCC is not right today, and no breakthrough is on the horizon, but there is a range of policy solutions to enable investments in the future.

Lossow, Tobias von. *Water as weapon: IS on the Euphrates and Tigris: the systematic instrumentalisation of water entails conflicting IS objectives*. 2016.

In the course of its territorial expansion, Islamic State (IS, ISIL or ISIS) has brought under its control strategically significant water resources and large parts of the water infrastructure in Syria and Iraq. It has seized several important dams on the Euphrates and Tigris as part of its expansion strategy and, particularly since 2014, has used water as a weapon in a number of ways. This practice has disastrous consequences, and it is virtually impossible for external actors to prevent it. And yet, even IS's room for manoeuvre is limited since a functioning water and electricity supply in the areas that it has captured is of existential importance for the militia. However, the anti-IS coalition's intensified military interventions since the Paris attacks put the militia under severe pressure. Should IS be forced into extensive withdrawals, then whole regions will be at risk of dramatic and widespread flooding.

Lossow, Tobias von. "The Rebirth of water as a weapon: IS in Syria and Iraq." *The International Spectator. Italian Journal of International Affairs* 51, no. 3 (2016): 82–99.

The so-called Islamic State (IS) has increasingly used water as a weapon in

order to further its political and military aims in Syria and Iraq. In this water-scarce region, IS has retained water and cut off crucial supplies, flooded large areas as well as contaminated resources. The capture of large dams in the Euphrates and Tigris basin has made it possible to deploy the water weapon even more effectively and in a frequent, systematic, consistent and flexible manner. Measures to counter this weaponisation effectively have been limited to military means. However, several internal constraints create a dilemma for IS as its state-building ambitions conflict with the consequences of the weaponisation of water. The rebirth of using the water weapon in Syria and Iraq raises questions about protecting water infrastructures in conflict and post-conflict settings.

Lovelock, Louisa, and Chris Mooney. "Baghdad's record heat offers glimpse of world's climate change future." *Washington Post*, 2020.

Door handles blistering to the touch. Leaves yellowed and brittle. And a yawning divide between AC haves and have-nots.

Luomi, Mari. *The Gulf monarchies and climate change: Abu Dhabi and Qatar in an era of natural unsustainability*. Oxford: Oxford University Press, 2014.

At the heart of this book is whether oil- and natural gas-dependent rentier monarchies can keep their natural resource use and the environment in balance. By examining the cases of Abu Dhabi and Qatar, it argues that the Gulf monarchies have already reached their limits of "natural sustainability". As a result of their booming economies, the Gulf Cooperation Council states' surging electricity and water demand have exerted unexpected pressures on domestic energy supply. Several of them are now dependent on natural gas imports. Groundwater resources are dwindling, food import dependence is high and rising, and the environmental impacts of the past decade's economic growth are undeniable. Qatar's per capita emissions of carbon dioxide, for example, are ten times the global average. Simultaneously, the consolidation of climate change on the international agenda has created a new uncertainty for local rulers whose survival is largely underpinned by a ruling bargain that is sustained by export revenues from fossil fuels. Domestic natural resource consumption, together with climate change, are putting unprecedented pressure on the region. Not only is the fragile desert environment of the Gulf under stress, but so too are its states' power, wealth and stability. This book reveals how Abu Dhabi, the leading emirate of the United Arab Emirates, and Qatar have responded

to these new natural resource-related pressures, particularly climate change, and how their responses are inextricably linked with elite legitimacy strategies and the “natural unsustainability” of their political economies.

Luomi, Mari. “Mainstreaming climate policy in the Gulf Cooperation Council states.” *OIES Paper MEP 7* (2014): 73.

This paper by Mari Luomi examines current trends in domestic climate policy in the Gulf Cooperation Council (GCC) states. Given the politicisation of the topic at the international level, the paper takes a bottom-up approach that departs from the countries’ national circumstances, capabilities and vulnerabilities. It emphasises the opportunities inherent in integrating the goals of low-carbon, resource-efficient and climate-resilient development into these countries’ sustainable development goals.

Following a review of the relevant international frameworks for action and support, and available domestic policies and measures, the study builds a comprehensive climate action profile for the GCC states, with analyses of national circumstances, capabilities and vulnerabilities, and greenhouse gas emissions. For the three most active GCC states in this area, the United Arab Emirates, Saudi Arabia and Qatar, the study presents a comprehensive, sector-based assessment of existing measures aimed at or with benefits for emission reductions and climate resilience.

The study demonstrates that there is large potential for enhanced mitigation and adaptation action in the GCC states. It also argues that climate policy mainstreaming and low-emission development strategies (LEDS) would help these states in aligning their climate change-related policy aims with existing economic development visions and development strategies in a way that creates positive synergies.

Luomi, Mari, John T. Crist, Bushra Alam, and Muhammad Bilal Shakir. “Environmental sustainability in Qatar’s Education City: Strategies, initiatives and education.” *QScience Connect* (2013): 1–11.

This paper presents a summary of the results of a one-year student-faculty research project on environmental sustainability in Qatar’s prime knowledge economy vehicle, the Qatar Foundation (QF), and its home, Education City (EC), in Doha. The project’s main objective was to produce new information on the emergence of environmental sustainability policy and practice on the QF’s agenda

from a number of angles. The research team adopted a multi-level, multi-method approach to the topic, analyzing developments on three hierarchically interlinked levels: (i) strategic priorities of the State of Qatar and QF (ii) initiatives and projects in EC and (iii) individual attitudes and self-reported behavior of EC undergraduate students. A variety of research methods were employed, including document-based analysis, semi-structured interviews and survey research. The survey, administered in November 2012-February 2013, yielded a sample of 114 responses. Highlights of the survey analysis are presented in this summary paper. The study is believed to have been the first comprehensive look at the evolution of QF's ambitious agenda to investigate, implement and promote environmental sustainability in EC. In addition to understanding the rationale underpinning the QF's commitment, the study also explored how the QF's goals are implemented by QF divisions and university administrations. Also, how EC's different sustainability programs are understood and received by its core constituency, the students. QF's commitment to environmental sustainability is both a key contributor to Qatar's national development and a significant component of its global brand. Therefore, understanding the achievements and challenges in translating ideals of environmental sustainability into practice in EC not only provides a useful basis upon which programs and initiatives may be strengthened and expanded, but also offers important lessons for other institutions in the country and the region. The paper concludes with a number of recommendations, based on the results of the research, relating to improving the effectiveness of sustainability policy in Education City. The project was funded through the Qatar National Research Fund's Undergraduate Research Experience Program.

Maniates, Michael F. "Individualization: Plant a tree, buy a bike, save the world." *Global Environmental Politics* 1, no. 3 (2001): 31-52.

An increasingly dominant, largely American response to the contemporary environmental crisis understands environmental degradation as the product of individual shortcomings and finds solutions in enlightened, uncoordinated consumer choice. Several forces promote this process of individualization, including the historical baggage of mainstream environmentalism, the core tenets of liberalism, the dynamic ability of capitalism to commodify dissent, and the relatively recent rise of global environmental threats to human prosperity. The result is to narrow our collective ability to imagine and pursue a variety of productive responses to the environmental problems before us. When responsibility for environmental problems is individualized, there is little room to ponder institutions, the nature and exercise

of political power, or ways of collectively changing the distribution of power and influence in society. Confronting consumption requires individuals to understand themselves not primarily as consumers but rather as citizens in a participatory democracy, working together to change broader policy and larger social institutions. It also requires linking explorations of consumption to politically charged issues that challenge the political imagination.

 Marks, Robert B. (1949-). *The origins of the modern world: A global and environmental narrative from the fifteenth to the twenty-first century*. Rowman & Littlefield, 2019.

This clearly written and engrossing book presents a global narrative of the origins of the modern world from 1400 to the present. Unlike most studies, which assume that the “rise of the West” is the story of the coming of the modern world, this history, drawing upon new scholarship on Asia, Africa, and the New World and upon the maturing field of environmental history, constructs a story in which those parts of the world play major roles, including their impacts on the environment. Robert B. Marks defines the modern world as one marked by industry, the nation state, interstate warfare, a large and growing gap between the wealthiest and poorest parts of the world, increasing inequality within the wealthiest industrialized countries, and an escape from the environmental constraints of the “biological old regime.” He explains its origins by emphasizing contingencies (such as the conquest of the New World); the broad comparability of the most advanced regions in China, India, and Europe; the reasons why England was able to escape from common ecological constraints facing all of those regions by the eighteenth century; a conjuncture of human and natural forces that solidified a gap between the industrialized and non-industrialized parts of the world; the mounting environmental crisis that defines the modern world; and the ways in which the forces of globalization stress the economic and political underpinnings of the modern world.

Now in a new edition [1st edn. *The origins of the modern world: Fate and fortune in the rise of the West*, 2007] that brings the saga of the modern world to the present in an environmental context, the book considers how and why the United States emerged as a world power in the twentieth century and became the sole superpower by the twenty-first century, and why the changed relationship of humans to the environment likely will be the hallmark of the modern era--the Anthropocene. Once again arguing that the US rise to global hegemon was contingent, not inevitable, Marks also points to the resurgence of Asia and the vastly changed relationship of humans to the environment that may in the long run overshadow any political and economic milestones of the past hundred years.--Kenneth Pomeranz, University of

Chicago

“Masdar global gen Z sustainability survey.” (2016).

The first global survey of the attitudes of young people aged 18-25 – ‘Generation Z’ – towards climate change, sustainable development and renewable energy.

Massignon, Louis. “La nature dans la pensée islamique.” *Eranos-Jahrbuch* 14 (1946): 144–48.

McCann, James C. “Climate and causation in African history.” *The International journal of African historical studies* 32, no. 2-3 (1999): 261–79.

“Over the course of the past decade research and writing on African environmental history has expanded in its scope and deepened in its sophistication. In particular this new African environmental history has moved dramatically away from its reductionist beginnings to put the natural world into full play alongside social and political institutions of local peoples and regional social formations. [...] The new African environmental historiography weaves the nuances of seasonality and longer-term social adaptations to climate crises into a coherent historical fabric that both recognizes local patterns and accommodates global change in political ecology.”

McKee, Emily. “Environmental framing and its limits: Campaigns in Palestine and Israel.” *International Journal of Middle East Studies* 50, no. 3 (2018): 449–70.

As activists frame campaigns, their region’s broader cultural and political context intercedes. In Israel and Palestine attempts to work across national lines and undertake activism that links ecological, economic, and social issues have long been stymied. This article examines how the fraught historical and contemporary relationships of Israelis and Palestinians with land bestow both flexibility and limitations on their framing of campaigns. In particular, it ethnographically analyzes the framing of two projects—the building of an “eco-mosque” and a Jordan River restoration effort—to examine how activists grapple with frame flexibility and its limits. It finds that an Israeli tendency to deterritorialize environmental issues and

curb environmental campaigns that are “too political” conflicts with Palestinian criticism of apolitical frames because they euphemize violence and domination. These cases demonstrate how local connotations can make or break environmental campaigns. The eco-adage, “Think global, act local” is not enough. One must think local, too.

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McNeill, John R. “The state of the field of environmental history.” *Annual Review of Environment and Resources* 35 (2010): 345–74.

This article reviews the state and evolution of the field of environmental history since about 1970. It focuses chiefly on the work of professional historians, but because environmental history is pursued by many varieties of scholars, it occasionally discusses the work of archeologists, geographers, and others. It offers a working definition of the field and an account of its origins, development, and institutionalization from the 1970s until 2010. It briefly surveys the literature on several world regions, concentrating most heavily on South Asia and Latin America, where environmental history at present has grown especially lively. It considers the prominence of Americanists (that is, historians of the United States, not the same thing as Americans) in the field and how that prominence is now waning. It reviews the utility of environmental history for historians, sketches some of the critiques of environmental history, and comments upon some signal findings of recent years.

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Meister, Mark (1968-), and Phyllis M. Japp, eds. *Enviropop: Studies in environmental rhetoric and popular culture*. Westport, CT: Praeger, 2002.

Relates and studies two salient aspects of American life from a rhetorical and critical perspective: popular culture and environmental issues.

Although much scholarly and critical attention has been paid to the relationship between rhetoric and environmental issues, media and environmental issues, and politics and environmental issues, no book has yet focused on the relationship between popular culture and environmental issues. This collection of essays provides a rigorous and multifaceted rhetorical and critical perspective on the ways in which the language and imagery of nature is incorporated strategically into various popular culture texts--ranging from greeting cards to advertisements to supermarket tabloids. As a distinguished group of scholars reveals, our notions about the environment and

environmentalism are both reflected in and shaped by our popular culture in fascinating ways never previously examined in an academic context.

The consumptive vision of nature presented in these texts represents a wholly American view, one promoting leisure and comfort, and nature as the place to experience them. This good life attitude toward the environment often serves to commodify it, to render it little more than space in which to pursue conventional notions of the American dream. As such, the volume represents a bold and striking vision both of popular culture and of popular notions of an environment that can be either protected or just simply consumed.

TOC

Introduction A Rationale for Studying Environmental Rhetoric and Popular Culture

1

When Hallmark Calls Upon Nature Images of Nature in Greeting Cards

13

Monopoly the National Parks Edition Reading NeoLiberal Simulacra

31

Cultivating the Agrarian Myth in Hollywood Films

45

PrimeTime Subversion The Environmental Rhetoric of The Simpsons

63

Purification through Simplification Nature the Good Life and Consumer Culture

81

An Analysis of the TreeHugger Label

95

From Loch Ness Monsters to Global Warming Framing Environmental Risk in a Supermarket Tabloid

111

A Faint Green Sell Advertising and the Natural World

141

Environment as Consumer Icon in Advertising Fantasy

161

Living Above it All The Liminal Fantasy of Sport Utility Vehicle Advertisements

175

Index

197

About the Editors and Contributors

Michaelowa, Axel, and Sonja Butzengeiger. "Breakthrough of hydrogen technologies until 2030: chances and risks for Gulf countries, international policy implications." *EDA Insight. Research & Analysis* (2019):

The year 2018 saw the emergence of a broad social movement demanding stringent policies for climate change mitigation in Europe and other world regions. Widespread meteorological extreme events consistent with rapid global warming are stoking this movement. Especially in Europe, it has already changed the political landscape in a number of countries as green parties have scored record votes. Therefore, policymakers in many countries are sharpening their emission reduction targets for 2030 and 2050. At the same ...

Mikhail, Alan. "Global implications of the Middle Eastern environment." *History Compass* 9, no. 12 (2011): 952–70.

Through a discussion of the burgeoning literature related to environmental topics in the Middle East, this article explains what both environmental historians and historians of the Middle East stand to gain from a consideration of Middle East environmental history. After an examination of the limitations and possibilities of the available source base, the article addresses three main areas of research: climate, energy, and disease. It is meant to serve as an introduction to a new field and to suggest some possible avenues for future research.

Mikhail, Alan. *Nature and empire in Ottoman Egypt: An Environmental history*. Cambridge: Cambridge University Press, 2011.

Focuses largely on the "politics of irrigation in the Egyptian countryside and how the resources built around the Nile's watering of Ottoman Egypt affected imperial rule in Egypt and throughout the empire."

In one of the first ever environmental histories of the Ottoman Empire, Alan Mikhail examines relations between the empire and its most lucrative province of Egypt. Based on both the local records of various towns and villages in rural Egypt and the imperial orders of the Ottoman state, this book charts how changes in the control of natural resources fundamentally altered the nature of Ottoman imperial sovereignty in Egypt and throughout the empire. In revealing how Egyptian peasants were able

to use their knowledge and experience of local environments to force the hand of the imperial state, *Nature and Empire in Ottoman Egypt* tells a story of the connections of empire stretching from canals in the Egyptian countryside to the palace in Istanbul, from the Anatolian forest to the shores of the Red Sea, and from a plague flea's bite to the fortunes of one of the most powerful states of the early modern world.

Mikhail, Alan, ed. *Water on Sand: Environmental Histories of the Middle East and North Africa*. Oxford University Press USA, 2013.

From Morocco to Iran and the Black Sea to the Red, *Water on Sand* rewrites the history of the Middle East and North Africa from the Little Ice Age to the Cold War era. As the first holistic environmental history of the region, it shows the intimate connections between peoples and environments and how these relationships shaped political, economic, and social history in startling and unforeseen ways. Nearly all political powers in the region based their rule on the management and control of natural resources, and nearly all individuals were in constant communion with the natural world. To grasp how these multiple histories were central to the pasts of the Middle East and North Africa, the chapters in this book evidence the power of environmental history to open up new avenues of scholarly inquiry.

Mikhail, Alan. *The Animal in Ottoman Egypt*. Oxford University Press, USA, 2016.

Uses the “changing relationships between humans and animals as a lens through which to analyze the political, social, economic, and environmental history of early modern and nineteenth-century Egypt.”

“Since humans first emerged as a distinct species, they have been locked into relationships with other animals. Humans ate, fought, prayed, and moved with animals. In this original and conceptually rich book, historian Alan Mikhail puts the history of human-animal relations at the center of the transformations of the Ottoman Empire from the sixteenth to the nineteenth centuries. He uses the history of the empire’s most important province, Egypt, to explain how human interactions with livestock, dogs, and charismatic megafauna changed more in a few centuries than they had for millennia. The human world became one in which animals’ social and economic functions were diminished. Without animals, humans had to remake the societies they had built around the intimate and cooperative interactions between species. The political and even evolutionary consequences of this separation

of people and animals were wrenching and often violent. In tracing these interspecies histories, this book offers a bold program for Ottoman historians--highlighting a new capacious periodization of the empire's history, integrating environmental history and other methodologies, and opening up archives in close to a dozen countries. The wide-ranging and creative analyses on offer also push far beyond Ottoman history to engage issues in animal studies, economic history, early modern history, and environmental history. Carefully crafted and compellingly argued, *The Animal in Ottoman Egypt* tells the story of the high price humans and animals paid as they entered the modern world”

Mikhail, Alan. *Under Osman's Tree: The Ottoman Empire, Egypt, and Environmental History*. University of Chicago Press, 2017.

Osman, the founder of the Ottoman Empire, had a dream in which a tree sprouted from his navel. As the tree grew, its shade covered the earth; as Osman's empire grew, it, too, covered the earth. This is the most widely accepted foundation myth of the longest-lasting empire in the history of Islam, and offers a telling clue to its unique legacy. Underlying every aspect of the Ottoman Empire's epic history—from its founding around 1300 to its end in the twentieth century—is its successful management of natural resources. *Under Osman's Tree* analyzes this rich environmental history to understand the most remarkable qualities of the Ottoman Empire—its longevity, politics, economy, and society.

The early modern Middle East was a crucial zone of connection between Europe and the Mediterranean world, on the one hand, and South Asia, the Indian Ocean, and sub-Saharan Africa, on the other. Accordingly, global trade, climate, and disease both affected and were affected by what was happening in the Middle East's many environments. The trans-territorial and trans-temporal character of environmental history helps shed new light on the history of the region, and Alan Mikhail's latest tackles major topics in environmental history: natural resource management, climate, human and animal labor, water control, disease, and the politics of nature. It also reveals how one of the world's most important religious traditions, Islam, has related to the natural world. This is a model book that sets the course for Middle East environmental history.”

Ministry of the Environment, Qatar. “Intended nationally determined contributions (INDCs) report.” (2015):

<https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Qatar%20First/Qatar%20INDCs%20Report%20-English.pdf>.

The Qatar National Vision 2030 contains four pillars: Human, Social, Economic and Environmental development. Qatar is trying to guarantee a freedom of economic enterprise on the basis of social justice and balanced cooperation between private and public activity, in order to achieve socio-economic development. It is through the fourth pillar, in particular, that the State of Qatar is seeking to preserve and protect its unique environment. This fourth pillar is of high importance as it seeks to strike a balance between development needs and environmental protection, and supports international efforts to mitigate the effects of climate change. Therefore, the State of Qatar is dealing with the potential impacts of climate change through initiating several contributions and activities.

Mitchell, Timothy. "Afterword: Are environmental imaginaries culturally constructed?" In *Environmental Imaginaries of the Middle East and North Africa*, edited by Diana K. Davis, and Edmund Burke, 265–73. Athens, OH: Ohio University Press Athens, 2011.

THE MODERN history of the Middle East has always been the history of a human relationship with nature. The environment appears to define the Arab-Islamic world more than it does any other major region in world history. It is time to ask, as this book does, how this naturalized history came about. Stretched in an irregular shape from the Atlantic to Central Asia, the region of the Middle East and North Africa was always demarcated by its climate. An arid environment was said to produce distinctive forms of history. Political orders ...

Mohammadkhah, Fatemeh, Akbar Babaei Heydarabadi, Mostafa Hadei, Sakineh Rakhshanderou, Mohammad Hossein Vaziri, and Abbas Shahsavani. "Knowledge [sic] and attitude of university students about air pollution problem in Tehran, Iran (2015-2016)." *Journal of Air Pollution and Health* 2 (2017): 81–86.

Introduction: Understanding public attitudes for planning policies and actions to control air pollution is important. Attitude is partially socially constructed and thus must be studied in each area separately, rather than inferred from other settings. This study was aimed to evaluate the knowledge and attitudes of university students about the air pollution sources and solutions in Tehran.

Material and methods: 200 students of Shahid Beheshti University of Medical Sciences (SBMU) during 2015 - 2016 years were selected by random sampling. The questionnaires were used to collect data consisted of four parts: demographic information, knowledge, attitude, and solutions for reducing air pollution.

Results: Most of the participants were 18 - 22 years old, male, single, studying in bachelor degree, and from Tehran. Significant correlations were found between attitude on one side and age, gender, marital status, and education level on the other side. The most approved solutions for air pollution by students were improvement of the quality of fuel (84.7%) and vehicles (79.7%), and development of green space (76.2%).

Conclusions: Educational programs must be designed to raise the level of public attitude about air pollution. Citizens should be a part of any solution for environmental problems.

Moneer, Aziza. "Environmental activism in the post-Arab Spring: It is not about a mere clean environment." *EuroMED Survey* 10 (2019): 66–73.

- The MENA region lacks rigorous environmental institutions and legal frameworks that are essential to reverse the current state of environmental degradation.
- The Arab Spring could also be described as a "green spring".
- Ain Salah, in the heart of the Algerian Sahara protesting against shale gas exploration; the "We are not Trash" campaign and "Egyptians against Coal" are examples of environmental activism.
- The social media played a key role in providing a platform to environmental activists and concerned citizens.
- Environmental movements also have significant political, social and cultural implications.
- The significant role of youths in these environmental mobilisations reflects their increasing awareness of environmental problems.
- Decarbonising economies that are heavily dependent on fossil fuel revenues will not be an easy task.
- The experience of the last few years suggests that cooperation between the EU and the MENA countries has been done on the basis of a Eurocentric approach.
- The EU should work together with fossil fuel producing countries in the MENA region to help diversify their economies and to make them more resilient to future climate shock.

Moore, Jason W. "The Modern World-System as environmental history? Ecology and the rise of capitalism." *Theory and society* 32, no. 3 (2003): 307–77.

This article considers the emergence of world environmental history as a rapidly growing but undertheorized research field. Taking as its central problematic the gap between the fertile theorizations of environmentally-oriented social scientists and the empirically rich studies of world environmental historians, the article argues for a synthesis of theory and history in the study of *longue duree* socio-ecological change. This argument proceeds in three steps. First, I offer an ecological reading of Immanuel Wallerstein's *The Modern World-System*. Wallerstein's handling of the ecological dimensions of the transition from feudalism to capitalism is suggestive of a new approach to world environmental history. Second, I contend that Wallerstein's theoretical insights may be effectively complemented by drawing on Marxist notions of value and above all the concept of "metabolic rift," which emphasize the importance of productive processes and regional divisions of labor within the modern world-system. Finally, I develop these theoretical discussions in a short environmental history of the two great "commodity frontiers" of early capitalism – the sugar plantation and the silver mining complex.

Moshiri, Saeed. "The effects of the energy price reform on households consumption in Iran." *Energy Policy* 79 (2015): 177–88.

The substantial subsidizing of energy prices over the years has led to high energy consumption, inefficiencies, fiscal pressures, and environmental problems in Iran. To address the increasing socio-economic problems associated with the energy subsidies, the government embarked on an aggressive energy price reform through which energy subsidies were removed and cash handouts were given to all households in 2010. In this paper, I analyze the effectiveness of the energy price reform in Iran by estimating energy demand elasticities for households in different income groups. I apply a two-stage consumer optimization model and estimate the system of energy expenditures shares using the household budget survey data for the period 2001-2008. The results show that the overall price elasticities of demand are small, but income elasticities are close to one. The results also indicate heterogeneous responses to energy price and income changes in different income groups. Specifically, the urban households show stronger response to price changes, but rural households, particularly mid-income households, to income changes. These findings suggest that the current policy of price increases would not solely be able to reduce

energy consumption and, therefore, it should be geared towards increasing energy efficiency through a series of price and non-price measures.

Mouffe, Chantal. "Space, hegemony, and radical critique," In *Spatial politics : Essays for Doreen Massey*, edited by David Featherstone, and Joe Painter, 19–31. Oxford: Wiley, 2013.

Nagel, Caroline, and Lynn Staeheli. "Nature, environmentalism, and the politics of citizenship in post-civil war Lebanon." *cultural geographies* 23, no. 2 (2016): 247–63.

More than 20 years after its devastating civil war (1975–1990), Lebanon has seen a burgeoning of environmental activism and discourse. Contemporary environmentalism is articulated largely by Western-educated activists, many of them working in the Western donor–financed non-governmental organization sector. Like romantic nationalists and urban reformers of the late 19th century, these activists view access to green space and nature as promoting patriotic attachments, civic virtue, and healthy social behaviors. They view green space and nature, as well, as an actual site for peaceful social interaction between ordinarily hostile groups and, hence, for the creation of national cohesion. This article explores the faith that activists place in the natural environment and open space as an instrument of citizenship and as a solution to Lebanon's sectarian factionalism. Lebanese environmentalism, we suggest, provides an important alternative political vision for Lebanon and a form of dissent against the political status quo. Ultimately, however, it cannot disentangle itself completely from the very sectarian political structure it seeks to dislodge.

ājī, Aḥmad (1985-). *Using life: A novel*. Austin: University of Texas, Center for ٲN Middle Eastern Studies, 2017.

] استخدام الحياة Upon its initial release in Arabic in the fall of 2014, *Using Life* [received acclaim in Egypt and the wider Arab world. But in 2016, Ahmed Najj was sentenced to two years in prison after a reader complained that an excerpt published in a literary journal harmed public morality. His imprisonment marks the first time

in modern Egypt that an author has been jailed for a work of literature. Writers and literary organizations around the world rallied to support Naji, and he was released in December 2016. His original conviction was overturned in May 2017 but, at the time of printing, he is awaiting retrial and banned from leaving Egypt. Set in modern-day Cairo, *Using Life* follows a young filmmaker, Bassam Bahgat, after a secret society hires him to create a series of documentary films about the urban planning and architecture of Cairo. The plot in which Bassam finds himself ensnared unfolds in the novel's unique mix of text and black-and-white illustrations. The Society of Urbanists, Bassam discovers, is responsible for centuries of world-wide conspiracies that have shaped political regimes, geographical boundaries, reigning ideologies, and religions. It is responsible for today's Cairo, and for everywhere else, too. Yet its methods are subtle and indirect: it operates primarily through manipulating urban architecture, rather than brute force. As Bassam immerses himself in the Society and its shadowy figures, he finds Cairo on the brink of a planned apocalypse, designed to wipe out the whole city and rebuild anew.

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 Neimanis, Astrida, Cecilia Åsberg, and Johan Hedrén. "Four problems, four directions for environmental humanities: Toward critical posthumanities for the Anthropocene." *Ethics & the environment* 20, no. 1 (2015): 67–97.

Taking into account intersecting trends in political, academic, and popular engagements with environmental issues, this paper concerns the development of environmental humanities as an academic field of inquiry, specifically in this new era many are calling the Anthropocene. After a brief outline of the environmental humanities as a field, we delimit four problems that currently frame our relation to the environment, namely: alienation and intangibility; the post-political situation; negative framing of environmental change; and compartmentalization of "the environment" from other spheres of concern. Addressing these problems, we argue, is not possible *without* environmental humanities. Given that this field is not entirely new, our second objective is to propose specific shifts in the environmental humanities that could address the aforementioned problems. These include attention to environmental imaginaries; rethinking the "green" field to include feminist genealogies; enhanced transdisciplinarity and postdisciplinarity; and increasing "citizen hu- manities" efforts.

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 Nerlich, Brigitte, Nelya Koteyko, and Brian Brown. "Theory and language of climate change communication." *Wiley Interdisciplinary Reviews: Climate Change* 1, no. 1

(2010): 97–110.

Climate change communication has become a salient topic in science and society. It has grown to be something like a booming industry alongside more established ‘communication enterprises’, such as health communication, risk communication, and science communication. This article situates the theory of climate change communication within theoretical developments in the field of science communication. It discusses the importance and difficulties inherent in talking about climate change to different types of publics using various types of communication tools and strategies. It engages with the difficult issue of the relationship between climate change communication and behavior change, and it focuses, in particular, on the role of language (metaphors, words, strategies, frames, and narratives) in conveying climate change issues to stakeholders. In the process, it attempts to provide an overview of emerging theories of climate change communication, theories that recently have begun to proliferate quite dramatically. In some cases, we can, therefore only provide signposts to the most relevant research that is being carried out with regard to climate change communication without being able to engage with all its aspects. We end with an assessment of how communication could be improved in light of the theories and practices discussed in this article. © 2010 John Wiley & Sons, Ltd.

Nisbet, Matthew C., and John E. Kotcher. “A Two-step flow of influence? Opinion-leader campaigns on climate change.” *Science Communication* 30, no. 3 (2009): 328–54.

In this article, we review concepts, measures, and strategies that can be applied to opinion-leader campaigns on climate change. These campaigns can be used to catalyze wider political engagement on the issue and to promote sustainable consumer choices and behaviors. From past research, we outline six relevant categories of self-designated opinion-leaders, detailing issues related to identification, recruitment, training, message development, and coordination. We additionally analyze as prominent initiatives Al Gore’s The Climate Project and his more recent We campaign, which combines the recruitment of digital opinion-leaders with traditional media strategies. In evaluating digital opinion-leader campaigns, we conclude that there are likely to be significant trade-offs in comparison to face-to-face initiatives. The challenge for both scholars and practitioners is to understand under what conditions are digital opinion-leaders effective and in which ways can online interactions strengthen or build on real-world

connections.

Nordenson, Jon. "Between populism and (electric) power: Reconciling a green shift and popular legitimacy in Kuwait." *Journal of Arabian Studies* 10, no. 1 (2020):

Nordenson, Jon. "Hvor blir det av bussen? Klimaendringene, diskurs og hegemoni i Kuwait." *Babylon: Nordisk tidsskrift for Midtøstenstudier* 18, no. 1 (2020):

En kampanje for kollektivtransport utfordrer den kuwaitiske statens narrativ om hvordan klimaendringene bør møtes, og peker på et fundamentalt spørsmål for alle de oljeeksporterende golfmonarkiene: Hvordan vil effektene av klimaendringene og det grønne skiftet påvirke forholdet mellom stat og samfunn?

Nordenson, Jon. "Climate change, the green shift, and electricity in Lebanese politics: Between contestation and co-optation." *Middle East Journal* (2021):

Oguz, Zeynep. "The unintended consequences of Turkey's quest for oil." *Middle East Report (MERIP)* 296 (2020):

The discovery of oil in Turkey's southeast encouraged state elites to imagine that development would lead to the assimilation of Kurds into Turkish culture and language. Instead, oil infrastructures and the resulting social changes had very different consequences. Zeynep Oguz explains the historical dynamics of the quest for oil and how it nurtured Kurdish dissent and critique of the state.

Ornert, Anna. "Drivers and barriers to environmental engagement in the MENA region." *K4D Helpdesk Report* (2020): 28, https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/15498/832_Drivers_and_barriers_of_Environmental_Engagement_in_MENA.pdf.

What are the key drivers and barriers to environmental engagement in the

MENA region?

Focus on the following 10 countries: Egypt, Iraq, Lebanon, Libya, Morocco, Tunisia, Turkey, Occupied Palestinian Territories (OPTs), Syria and Yemen. Focus where available on civil society and environmental justice movements, although their interface with other stakeholders (governments and institutions) may also be relevant. Examples of levels of elite or public buy-in, as well as how environmental issues are framed by local or regional social and religious politics, (including, the interface between environmentalism and Islamic culture/ traditions) are of particular interest.

Contents

1. Summary
2. Environmentalism and Islam
3. Egypt
4. Turkey
5. Tunisia
6. Lebanon
7. Morocco
8. Libya
9. Occupied Palestinian Territories (OPTs)
10. References

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Summary:

Environmental engagement in the MENA region is a relatively new field of research (Vincenti, 2015). However, environmental activism has been intensifying in the region during the past few decades. It has been most evident in countries with semi-competitive political systems and long histories of collective action (for example, Lebanon, Tunisia, Egypt). While environmental contestation has also emerged to a lesser degree in authoritarian states considered inhospitable to activism (e.g. the Persian Gulf), “routine forms of civic engagement have become almost impossible in war-torn Syria, Yemen, and Libya” (Sowers, 2017).

This review examines the evidence from 7 MENA countries: Egypt, Turkey, Tunisia, Lebanon, Morocco, Libya and the Occupied Palestinian Territories (OPTs). This review draws on a mixture of academic papers, grey literature, and media reports. Despite growing environmental activism in the region, scholarship on environmental politics and social networks is, with some exceptions (Furniss, 2016; Sowers, 2013), limited (Vincenti; 2015; Loschi, 2019; Moneer, 2019; Sowers, 2017). There are also gaps

in the research on the attitudes that civil society stakeholders adopt towards renewable energy (Akemi et al., 2017); how 'green identities' are forged and motivate eco-communities towards environmental engagement (Vincenti, 2015). Additionally, despite a plethora of studies on the role of youth in political movements and collective actions in the MENA region during the Arab Spring, the role of youth in environmental activism is significantly under-researched (Moneer, 2019).

Key findings from the reviewed literature:

- * There is growing interest in the role Islamic ethics might play mobilising environmental action, but an Islamic environmental movement has yet to emerge.

- * Country context and local dynamics very much shape the drivers and barriers of environmental engagement across the MENA region:

- o Egypt's dependence on the hydrocarbon sector for government revenue and to fulfil its domestic energy demand shapes the attitudes towards energy and environmentalism amongst both the ruling elite and the wider public.

- o In Turkey, the deep levels of polarisation along Islamist-secularist lines creates difficulties for environmental NGOs to influence the government. The majority of environmental organisations are secular, but the Islamist-leaning government is more willing to engage with Islamist environmental non-governmental organisations (NGOs).

- o In Tunisia, many of the mobilisations during the 2011 revolution embraced the environmental agenda as a tool of resistance against the political system and environmental activism in Tunisia grew during the transitional phase.

- o Lebanon also suffers from stark sectarian divisions and environmentalism is seen as a way to transcend political divides. Environmental practice often aims to be apolitical and is intertwined with a broader set of goals relating to the production of a new societal order.

- o In Morocco, where the government has invested heavily in renewable energy, environmental activism often involves resistance to renewable energy projects and relates to issues such as resource access, political power, and economic justice. Climate advocacy groups also work with women-led small businesses on implementing sustainable solutions at the grassroots level.

- o Libya, compared to other Arab League countries, scores highly on the World Values Survey (2011) on issues including membership rate environmental organisations, participation in environmental demonstrations and giving priority to protecting the environment over economic growth (Tausch, 2015). Nevertheless, civil society in general is very weak as a result of several decades of authoritarian rule and ongoing violence.

- o In the Occupied Palestinian Territories (OPTs), environmental issues are intimately related to everyday access to resources, their use and control, but environmental

activism has been overshadowed by the Israeli Occupation.

* Successful environmental movements in several countries have key factors in common. They are able to appeal to a broad social base, link well-defined and seemingly apolitical aims to wider social issues, secure important elite and government allies, and utilise new, old and social media to communicate campaigns to the wider public.

* There is evidence that public awareness and knowledge of environmental issues in some countries is weak. In others, citizens are well informed about environmental issues, but these are a lower priority than economic and social concerns (e.g. poverty and unemployment).

The dominance of fossil fuel economies in the MENA region with large Muslim majority populations has led to growing interest in the links between Islamic ethics and environmentalism. Section 2 therefore looks at evidence of Islamic environmentalism in the MENA region. Sections 3 – 9 examine drivers and barriers to environmental engagement in the countries that are the focus of this rapid review.

Ouis, Pernilla. “Greening the Emirates’: The modern construction of nature in the United Arab Emirates.” *Cultural Geographies* 9, no. 3 (2002): 334–47.

As part of the project of postcolonial national modernization, the United Arab Emirates has seen the transformation of significant areas of the country’s desert environment into green landscapes, with enormous resources devoted to agricultural development, park landscaping and nature reserves. In addition, recent years have also seen the creation of a number of social institutions dealing with environmental issues. This paper critically considers this dual ‘greening of the emirates’. Analysing the material, cultural and social construction of this green nature, I argue that it must be seen in the context of a shift from a premodern to a modern relationship to nature. However, whilst in part this has meant the use of oil money to import what are seen as Western environmental technologies and ideas, it has also involved the construction of a distinctive Emirati form of modern nature. The paper concludes with a discussion of how this represents a case of the ‘glocal’ geographies of ecological modernization.

Özler, Ş. İlgu, and Brian K Obach. “Cultural barriers to environmental mobilization in the Republic of Turkey.” *Sociological Perspectives* 62, no. 5 (2019): 773–93.

The Republic of Turkey provides an opportunity to examine how aspects of

national culture can foster sentiments contrary to environmental mobilization. Two deeply rooted cultural values embedded at the founding of the Turkish Republic, a commitment to developmentalism and a strong suspicion of foreign interference, have served to undermine the Turkish environmental movement. Calls for environmental protection are perceived by many as foreign-inspired efforts to inhibit economic development and keep Turkey subservient to more developed nations. In addition, the Turkish case reveals how cultural division can divert attention from issues such as environmental protection. The country is characterized by sharp social boundaries between secularists and more conservative Islamists. This profound cultural divide taints all attempts at issue-based mobilization, including that around environmental protection. An analysis of interview data from 50 environmental movement leaders and government officials demonstrates how deeply held cultural values and social division serve to undermine environmental mobilization.

Pamukcu, Konuralp. "Water trade between Israel and Turkey: A start in the Middle East?" *Middle East Policy* 10, no. 4 (2003): 87–99.

Starting with the Military Training and Cooperation Agreement signed on February 24, 1996, the Israeli-Turkish strategic partnership has spread to other fields of cooperation such as trade, tourism and science. After the free-trade agreement, which took effect in May 1997, the trade volume between Israel and Turkey rose in a short time to \$1.2 billion. Turkey has become Israel's most important trading partner in the Middle East. Each year about 330,000 Israeli tourists contribute to the Turkish economy, spending around \$250 million. Israeli and Turkish companies have been investing individually and jointly in each other's country. Scientific cooperation between universities and scientific institutions in both countries has increased sharply.

Now Israel and Turkey are about to add a new dimension to their relations: water trade. Israel has been suffering from its worst water crisis, caused by severe droughts for three years in a row (1998-2001) and rapidly increasing water consumption due to population growth and a rise in living standards. The deficit in its water budget threatens Israel's political and economic stability as well as the peace process in the Middle East. So, after long negotiations on the total cost, Israel and Turkey signed an agreement on August 6, 2002, that would make water trade a reality for the first time in the modern history of the Middle East.

Pearce, Fred. "Mideast water wars: In Iraq, a battle for control of water."

YaleEnvironment 360 (2014):

Conflicts over water have long haunted the Middle East. Yet in the current fighting in Iraq, the major dams on the Tigris and Euphrates rivers are seen not just as strategic targets but as powerful weapons of war.

Policy Unit (IRENA), Laura El-Katiri, Arslan Khalid, Robin Mills, Maryam Salman, and Roa Ibrahim. *Renewable energy market analysis: GCC 2019*. Abu Dhabi: International Renewable Energy Agency (IRENA), 2019.

Renewable energy has advanced rapidly in the Gulf Cooperation Council (GCC) countries since 2014. The project pipeline reached almost 7 gigawatts (GW) of new power generation capacity by 2018, after record breaking bids in renewable energy auctions in the United Arab Emirates (UAE) and Saudi Arabia made solar power cost-competitive with conventional energy technologies.

This report from the International Renewable Energy Agency (IRENA) explores the prospects for renewables to diversify both national economies and the combined GCC energy mix, while also helping the region meet climate commitments and contribute to the 2030 Agenda for Sustainable Development.

Abundant resources, together with strong enabling frameworks have led to solar PV prices of below 3 cents (USD 0.03) per kilowatt hour and dispatchable concentrated solar power (CSP) of 7.3 cents per kilowatt hour, which is less than some utilities in the region pay for natural gas.

Wealth and socio-economic development across the GCC remain closely tied to the region's substantial oil and gas reserves. Yet rising populations and economic diversification have led to greater energy demand. Renewables, although a relatively recent entrant to the GCC energy landscape, hold vast potential to cut fuel costs, reduce carbon emissions, conserve scarce water and create jobs.

The report serves as an update to IRENA's 2016 study, *Renewable Energy Market Analysis: The GCC Region*.

Ramsay, Gail. "Breaking the silence of nature in an Arabic novel: *Nazīf al-ḥajar* by Ibrāhīm al-Kawnī," In *From Tur Abdin to Hadramawt: Semitic studies in honour of Bo Isaksson on the occasion of his retirement*, edited by Tal Davidovich, Ablahad Lahdo, and Torkel Lindquist, 149–72. Wiesbaden: Harrassowitz, 2014.

This article is part of the endeavor to link ecocritical writing and theory in the

West and the East to each other. It asks what can be learned from an ecocritical reading of an Arabic novel about ecological awareness in Arabic literature while exploring ecological implications of human-nature relationships in *Nazīf al-ḥajar* (1990) by Ibrāhīm al-Kawnī. We are guided by principles of ecocriticism which require “the search for an environmental counterethics” that confront “the silence of nature” spoken of by Christopher Manes (1996: 16, 26). We explore a specific question of concern in the novel, that of the extinction of central species of wildlife in the bioregion which includes the southwestern desert of Libya. While doing this we search for evidence of life-styles suitable for cosmopolitan life in the global village of the present. To gauge ecological awareness and illuminate cultural and ideational structures serving such environmentally concerned life-styles in *Nazīf al-ḥajar* we apply Hubert Zapf’s (2002) triadic model which considers (1) culture critical; (2) imaginative and; (3) reintegrative themes while applying a postmodern and “ecologically informed reading” in the vein of Serpil Oppermann (2006).

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Ramsay, Gail. “Nature as a road to integration? A Saudi experience.” *British Journal of Middle Eastern Studies* (2019): 1–17.

Well-being through outdoor life and ecolacy are fundamental concepts in sociological research with regard to the question whether nature is instrumental for integration into some Western societies. In this article, we ask if the Saudi Arabian protagonist in Muḥammad Ḥasan ‘Alwān’s novel, *al-Qundus*, (The Beaver), 2011, becomes a part of, ‘integrated in’, North American society by means of ecolacy. An ecocritical and sociological reading, which takes into account human and non-human communication, shows that the protagonist does not become integrated into the North American society to which he has immigrated by way of his acquired ecolacy. Rather, his steps towards ecolacy seem to lead to self-knowledge and reconciliation with his family members in Riyadh rather than being a conduit to integration.

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Ramsay, Gail. “Ecological literacy in an Egyptian short story.” *Studia Semitica Upsaliensia* (2020):

This ecocritical article explores a way in which an urban society in the Arab world may respond to an ecosystem and the needs of a non-human entity by acquiring a measure of ecological literacy (also referred to as eco-literacy and ecolacy) in a short story by an Egyptian author. Guided by David W. Orr’s concept of ecological

literacy (1992) and ecoliteracy (Amy Cutter Mackenzie and Richard Smith, 2003) I aim to show in which way this short story expresses awareness of ecological interrelatedness and an attitude of care and stewardship towards nature. In the vein of Christopher Manes (1996) and Don Kulick (2017), I also argue that an environmental ethics which speaks on the behalf of nature and empathetic engagement with life beyond the human, comes to the fore.

Raouf, Mohamed Abdel, and Mari Luomi, eds. *The Green economy in the Gulf*. Routledge, 2015.

Filling a void in academic and policy-relevant literature on the topic of the green economy in the Arabian Gulf, this edited volume provides a multidisciplinary analysis of the key themes and challenges relating to the green economy in the region, including in the energy and water sectors and the urban environment, as well as with respect to cross-cutting issues, such as labour, intellectual property and South-South cooperation. Over the course of the book, academics and practitioners from various fields demonstrate why transitioning into a 'green economy' – a future economy based on environmental sustainability, social equity and improved well-being – is not an option but a necessity for the Gulf Cooperation Council (GCC) States. Through chapters covering key economic sectors and cross-cutting issues, the book examines the GCC states' quest to align their economies and economic development with the imperatives of environmental sustainability and social welfare, and proposes a way forward, based on lessons learned from experiences in the region and beyond. This volume will be of great relevance to scholars and policy makers with an interest in environmental economics and policy.

=====
Table of Contents

Part 1 Green Economy and the Gulf

1. Introduction, Mohamed Abdelraouf and Mari Luomi

Part 2 Energy and Water

2. Barriers to Greening the Energy Sector in the Gulf Cooperation Council, Ibrahim Abdel Gelil

3. Energy Pricing Reform and the Green Economy in the Gulf Region, Tom S. H. Moerenhout

4. Spanish Renewable Energy and Energy Efficiency: Lessons for Bahrain Reforms? Ghada Abdulla

5. Promoting an Effective Energy Efficiency Programme in Saudi Arabia: Challenges and Opportunities, Bandar Alhoweish and Chingiz Orujov

6. Green Challenges and Some Technological Solutions in the Water Sector of the GCC Countries, Mushtaque Ahmed, Salem Ali Al- Jabri and B. S. Choudri

Part 3 The Urban Environment

7. Green Buildings in the Arabian Gulf, Christopher Silva

8. Greening Urban Transport in the Gulf Cooperation Council Countries: Localised Approaches to Modal Integration as Key Success Factors, Arnd Bätzner

Part 4 Cross-cutting Issues: Labour, Law and International Cooperation

9. Workers and the Green Economy in the Gulf Cooperation Council Countries, Amit A. Pandya and Kristin Sparding

10. Agricultural Sustainability and Intellectual Property Rights in the Era of a Green Economy: A Case Study of the United Arab Emirates, Nihaya Khalaf

11. Green Economy Pathways in the Arab Gulf: Global Perspectives and Opportunities, Kishan Khoday, Leisa Perch and Tim Scott

Raz, Daniella. "Climate change: a tertiary concern for Arab citizens." *Arab Barometer* (2020): <https://www.arabbarometer.org/2020/04/climate-change-a-tertiary-concern-for-arab-citizens>.

Reinisch, Lisa. "Environmental journalism in UAE." *Arab Media & Society* 11 (2010): 1–

19.

This paper explores the evolving field of environmental journalism in the UAE's English-language press as well as the national and international context that underpins it. The development of a more independent press and more eco-friendly policies in the United Arab Emirates (UAE) is a top-down process which is both driven and contained by the ruling families of this absolute monarchy. Environmental journalism forms part of these prestige projects and occupies a privileged, though confined space, something of a golden cage, within the country's young media landscape.

Rignall, Karen Eugenie. "Solar power, state power, and the politics of energy transition in pre-Saharan Morocco." *Environment and Planning A* 48, no. 3 (2016): 540–57.

In 2009, the Kingdom of Morocco embarked on the Solar Plan, an ambitious 10-year plan to become a leading solar power producer. This paper examines the genesis of the first project in the plan, a concentrated solar power plant near the pre-Saharan city of Ouarzazate, in order to explore the "energy transition" as a political as well as geographic project. I specifically address how the government's acquisition of land drew on colonial strategies for dispossession that were subsequently embraced by the post-colonial state. At the same time, bureaucratic processes for responding to community demands effectively narrowed popular opposition to a set of technocratic problems to be solved by development interventions. **The official discourse of global environmental remediation obscured the socio-ecological relations at work in the project**, constructing the land as marginal so as to facilitate investment and foreclosing resident's broader political claims. Attending to the political dynamics surrounding solar power challenges assumptions that an energy transition necessarily involves a transition away from an environmentally destructive carbon-based economy—or from the forms of governmentality that support current energy regimes.

Robbins, Jim. "Green hydrogen: could it be key to a carbon-free economy?" *YaleEnvironment 360* (2020): <https://e360.yale.edu/features/green-hydrogen-could-it-be-key-to-a-carbon-free-economy>.

Green hydrogen, which uses renewable energy to produce hydrogen from water, is taking off around the globe. Its boosters say the fuel could play an important

role in decarbonizing hard-to-electrify sectors of the economy, such as long-haul trucking, aviation, and heavy manufacturing.

Robbins, Paul (1967-). *Political ecology: A critical introduction*. John Wiley & Sons, 2011.

An accessible, focused exploration of the field of political ecology The third edition of *Political Ecology* spans this sprawling field, using grounded examples and careful readings of current literature. While the study of political ecology is sometimes difficult to fathom, owing to its breadth and diversity, this resource simplifies the discussion by reducing the field down into a few core questions and arguments. These points clearly demonstrate how critical theory can make pragmatic contributions to the fields of conservation, development, and environmental management. The latest edition of this seminal work is also more closely focused, with references to recent work from around the world. Further, *Political Ecology* raises critical questions about “traditional” approaches to environmental questions and problems. This new edition: Includes international work in the field coming out of Europe, Latin America, and Asia Explains political ecology and its tendency to disrupt the environmental research and practice by both advancing and undermining associated fields of study Contains contributions from a wide range of diverse backgrounds and expertise Offers a resource that is written in highly-accessible, straightforward language Outlines the frontiers of the field and frames climate change and the end of population growth with the framework of political ecology An excellent resource for undergraduates and academics, the third edition of *Political Ecology* offers an updated edition of the guide to this diverse, quickly growing field that is at the heart of how humans shape the world and, in turn, are shaped by it.

This fully updated new edition introduces the core concepts, central thinkers, and major works of the burgeoning field of political ecology.

Explores the key arguments and contemporary explanatory challenges facing the sub-discipline

Provides the first full history of the development of political ecology over the last century and its theoretical underpinnings

Considers the major challenges facing the field now and for the future

Study boxes introduce key figures in the development of the discipline and summarize their most important works

Fully updated to include recent events, such as the Gulf of Mexico Oil Spill, as well as both urban and rural examples, from the developed and underdeveloped world

Rutherford, Bruce K, and Jeannie L Sowers. *Modern Egypt: What everyone needs to know*. New York: OUP USA, 2018.

TOC:

Preface: Why Study Egypt?

1 The Uprising of 2011 and Its Aftermath

2 The Rise of Modern Egypt

3 Building a New Regime: Nasser, Sadat, and Mubarak

4 Economic Development and Human Welfare

5 Environment, Natural Resources, and Quality of Life

6 Religion

7 Foreign Affairs

8 Prospects and Challenges for the Future

Saab, Najib. "Arab public opinion and climate change," In *Arab environment: Climate change*, 1–12. Arab Environment Climate Change, 2009.

A pan-Arab survey conducted by the Arab Forum for Environment and Development (AFED) found that a resounding majority of 98% believed that the climate is changing, and 89% thought this was due to human activities, including excessive use of energy and depletion of resources. 51% of respondents thought that governments were not acting adequately to address the problem. A small portion of 5% at the regional level said they did not understand what climate change was, reaching a maximum of 11% in Syria. However, 95% of those who said they did not understand what climate change was, still answered that they believed it was happening. Those who said climate change posed a serious challenge to their countries accounted for 84%, reaching 94% in Morocco and 100% in Tunisia. It was remarkable to find that over 94% believed that their countries would benefit from participating in global action to deal with climate change, and 93% pledged to participate in personal action to reduce their contribution to the problem.

Asked to choose sectors where climate change will have major impact in their countries, it stood out that not a single respondent said there will be no effect at all. The majority, at the regional level, gave priority to health, drinking water and food, followed by coastal areas. Those surveyed were also asked to choose the three most important measures to mitigate the causes and adapt to the effects of climate change. Changing consumption patterns, mainly reducing the use of energy, was the main measure chosen, followed by education and awareness. Ratifying and implementing

international treaties came third. It was peculiar that respondents from some countries which face major threats did not fully recognize this: 36% in Sudan answered that climate change did not pose serious problem to their country, at a time when a World Bank report put Sudan on top of a list of twelve countries classified to be the most affected regarding agriculture and food production. A similar situation applies to Syria, where 33% of the respondents did not find that climate change was a serious threat to the country. In contrast, 100% of Sudanese and Syrian respondents agreed that the climate is globally changing. This reflects the general trend of approaching climate change in Arab media and by politicians as a global issue, with little being discussed about local implications.

The results clearly showed that climate change has become widely accepted by the public in Arab countries as a fact which needs to be addressed. Remarkably, the majority of respondents from all countries, regions and socio-economic backgrounds agreed that more should be done by governments. Moreover, the survey showed that the sceptical attitudes which prevailed among some groups on the facts and causes of climate change, either denying it entirely or limiting it to natural causes, are receding.

Saab, Najib, and Abdul-Karim Sadik. *Sustainable development in a changing Arab climate: How can Arab countries achieve sustainable development goals by 2030*. Beirut: Arab Forum for Environment and Development, 2016.

In the MENA region, the realization of the United Nations General Assembly's SDGs (Sustainable Development Goals) is limited and slow. The priorities given to the seventeen SDGs differ significantly across the region due to the specific needs and situations of each country. Positive changes can be observed, for example for renewable energy, while other important goals remain unattained. Conflicts present a major obstacle for advancement. One step forward would be to establish institutions to concentrate efforts and mobilize action within all segments of society. The EU could support such developments by enhancing peer-to-peer contacts and cooperation.

Schäfer, Mike S. "Online communication on climate change and climate politics: a literature review." *Wiley Interdisciplinary Reviews: Climate Change* 3, no. 6 (2012): 527–43.

The study of climate change communication has become an important

research field. As stakeholders such as scientists, politicians, corporations, or NGOs increasingly turn to the Internet and social media for providing information and mobilizing support, and as an increasing number of people use these media, online communication on climate change and climate politics has become a relevant topic. This article reviews the available scholarly literature on the role of online and social media in climate communication. It analyzes how stakeholders use online communication strategically, showing, for example, that climate scientists and scientific institutions do not seem to be major players in online debates about climate change and climate politics. Furthermore, it highlights the characteristics of online climate communication, outlining, for example, that although (or because) many stakeholders participate online, this does not lead to robust scientific information or better debates. Eventually, the review assesses what is known about the uses and effects of online climate communication, showing that impacts on the broader public seem to be limited so far. Research desiderata are identified in the end, and directions for further studies are shown.

Schäfer, Mike S., and Inga Schlichting. "Media representations of climate change: A meta-analysis of the research field." *Environmental Communication* 8, no. 2 (2014): 142–60.

A flurry of studies in recent years has analyzed the role of media in climate change communication. This article provides a systematic, large-scale, and up-to-date overview of the objects and characteristics of this research field through a meta-analysis. It identifies 133 relevant studies and analyzes them empirically. The results show that research activity has risen strongly over time, and that the analytical spectrum has expanded to include an increasing number of countries, more types of media including online and social media, and different methodological approaches. The analysis also demonstrates, however, that scholarship in the field still concentrates strongly on Western countries and print media.

Scheffran, Jürgen, Michael Brzoska, Hans Günter Brauch, Peter Michael Link, and Janpeter Schilling, eds. *Climate change, human security and violent conflict: challenges for societal stability*. Heidelberg: Springer Science & Business Media, 2012.

Severe droughts, damaging floods and mass migration: Climate change is becoming a focal point for security and conflict research and a challenge for the world's governance structures. But how severe are the security risks and conflict

potentials of climate change? Could global warming trigger a sequence of events leading to economic decline, social unrest and political instability? What are the causal relationships between resource scarcity and violent conflict? This book brings together international experts to explore these questions using in-depth case studies from around the world. Furthermore, the authors discuss strategies, institutions and cooperative approaches to stabilize the climate-society interaction.

Schmitt, Thomas M. "(Why) did Desertec fail? An interim analysis of a large-scale renewable energy infrastructure project from a Social Studies of Technology perspective." *Local Environment* (2018): 747–76.

In 2009 the Desertec Industrial Initiative (DII) was founded by several, predominant German enterprises. The objective of DII was to organise the conditions for the realisation of the Desertec idea, which aimed to both (a) supply Europe, in a large-scale manner, with electricity produced in solar power plants in North Africa and the Arabic peninsula and (b) contribute to the self-supply of the Middle East North Africa region (MENA). Protagonists of the desert energy idea saw this megatechnic project as a starting point for a new trans-Mediterranean EU-MENA union, critics in contrast as a neo-colonial project. Disputes over the adequate interpretation and implementation of the Desertec idea broke out from the beginning. In 2014/2015, the media talked of the failure of DII and of the Desertec concept. The majority of the members left DII at the end of 2014. On the other hand, in some MENA countries renewables are playing a crucial role in securing the future of the energy sector. This paper analyses the development of DII and the Desertec idea by using concepts from Social Studies in Technology, and especially by the multi-level perspective approach in Transition Studies. It shows how the interplay of different factors, such as technological developments, entrepreneurial performances and political processes, lead to internal conflicts and the non-realisation – up to now – of related large-scale energy projects. As an important aspect of the paper, different understandings of the future of our energy supply and of North–South relations are presented in detail.

Schoenfeld, Stuart, and Jonathan Rubin. "Contrasting Regional Environmentalisms in the Eastern Mediterranean: A social constructionist perspective." *L'Espace Politique. Revue en ligne de géographie politique et de géopolitique* 14 (2011):

Regionalism, as a socio-political project, involves the social production of

knowledge; common interests are identified and a common identity around these shared interests is promoted. In the Eastern Mediterranean three projects of transnational environmental cooperation construct geographically different regions – a region with Israel, the Palestinian Territories and Jordan at the center, the Mediterranean, and the Arab region. The analysis of these contrasting projects draws on literature on framing, Middle East regionalism and regional environmental governance. The review asks whether these contrasting initiatives are competing or part of a dynamic process in which they positively reinforce each other.

Scrase, J. Ivan, and David G. Ockwell. “The role of discourse and linguistic framing effects in sustaining high carbon energy policy—An accessible introduction.” *Energy Policy* 38, no. 5 (2010): 2225–33.

This paper seeks to provide an accessible introduction to the relevance to energy policy of a fundamental insight from the policy sciences. This concerns the role that the linguistic framing of policy problems and solutions can play in sustaining the dominance of existing policy positions. The paper introduces a discourse perspective to understanding the policy process and uses it to analyse four central goals pursued in energy policy: access, security, efficiency and environmental acceptability, drawing on examples from UK policy documents. It introduces readers to how, as well as requiring technical and economic solutions, a transition to a low carbon energy system will also require a ‘reframing’ of energy policy problems and solutions in a way that either connects with, or overrides the powerful discourses that shape energy policy today.

Segeberg, Alexandra, and W. Lance Bennett. “Social Media and the Organization of Collective Action: Using Twitter to Explore the Ecologies of Two Climate Change Protests.” *The Communication Review* 14, no. 3 (2011): 197–215.

The Twitter Revolutions of 2009 reinvigorated the question of whether new social media have any real effect on contentious politics. In this article, the authors argue that evaluating the relation between transforming communication technologies and collective action demands recognizing how such technologies infuse specific protest ecologies. This includes looking beyond informational functions to the role of social media as organizing mechanisms and recognizing that traces of these media may reflect larger organizational schemes. Three points become salient in the case of Twitter against this background: (a) Twitter streams represent

crosscutting networking mechanisms in a protest ecology, (b) they embed and are embedded in various kinds of gatekeeping processes, and (c) they reflect changing dynamics in the ecology over time. The authors illustrate their argument with reference to two hashtags used in the protests around the 2009 United Nations Climate Summit in Copenhagen.

Selby, Jan. "On blaming climate change for the Syrian civil war." *Middle East Report (MERIP)* 296 (2020):

The idea that the Syrian civil war was partly caused by climate change induced drought is widely repeated and yet deeply flawed. Jan Selby excavates the sources of misleading information and dismantles the simplistic cause and effect argument. Most importantly, he explains the real political and economic reasons behind agricultural crisis in Syria's northeastern breadbasket region.

Shahid, Shabbir A, and Mohamed Behnassi. "Climate change impacts in the Arab Region: review of adaptation and mitigation potential and practices," In *Vulnerability of Agriculture, Water and Fisheries to Climate Change*, 15–38. Springer, 2014.

This paper aims at presenting a comprehensive review of mitigation and adaptation efforts being made to cope with climate change impact in the Arab region. The review was completed through consulting already published literature (such as official reports, books, scientific papers, conference proceedings, flyers, pamphlets, newspapers, newsletters, and websites). In addition to these, efforts made by Dubai-based International Center for Biosaline Agriculture - to which the key author belongs - will also be shared. The focus is being made on the Arab region with some examples from around the world. It is revealed that climate change (CC) is old phenomenon and the most discussed topic of the present time, and the management of this challenge extends the individual capacity of concerned countries. The CC is impacting all continents, but significantly the water-scarce developing countries, including the Arab region where the major concern is linked to the increase in temperature and rainfall decline leading to increase in evapotranspiration and changes in water cycle depleting the groundwater resources respectively, crucial for both farming and survival of nature, living beings and biodiversity, and in combating desertification. It is envisaged that effective mitigation and adaptation actions, as well as communication of related achievements, can pave the way to slow CC impacts. However, there are pragmatic views expressed by scientists and businesses

regarding mitigation and adaptation efforts like the shift to alternate energy sources, biofuels, organic farming, change in land use, deforestation, using set aside or marginal lands, no till or low till farming, chemical fertilizers and leguminous crops, livestock management, rangelands, food security, etc. Each component has its own pros and cons under a set of environmental and geographical conditions. It is believed that adaptation practices can't be generalized to all vulnerable countries; hence the relevance of such adaptation practices to vulnerable country resources and needs must be carefully out looked and understood prior to enacting any adaptation action. It is also assumed that "business as usual" will increase GHG, whereas, adherence to global climate action (such as Kyoto Protocol and all related subsequent decisions) will reduce emission of GHG. It is clear that water scarcity - and not only land - will be a limiting factor to increase agriculture production, an issue that will be exacerbated in the Arab region by the predicted trends of climate change. It is visualized that limited efforts are made and implemented in the Arab region to meet climate change challenges, especially with regard to agriculture and biodiversity. Scientifically-determined climate patterns record barely exists while economic considerations are merely ignored.

Sheppard, Charles, Mohsen Al-Husiani, F. Al-Jamali, Faiza Al-Yamani, Rob Baldwin, James Bishop, Francesca Benzoni, Eric Dutrieux, Nicholas K. Dulvy, Subba Rao V. Durvasula, David A. Jones, Ron Loughland, David Medio, M. Nithyanandan, Graham M. Pilling, Igor Polikarpov, Andrew R. G. Price, Sam J. Purkis, Bernhard M. Riegl, Maria Saburova, Kaveh Samimi-Namin, Oliver Taylor, Simon Wilson, and Khadija Zainal. "Environmental concerns for the future of Gulf coral reefs," In *Coral reefs of the Gulf*, Ed. New York, NY: Springer, 2012.

Coral Reefs of the Gulf: Adaptation to Climatic Extremes is a complete review and reference for scientists, engineers and students concerned with the geology, biology or engineering aspects of coral reefs in the Middle East. It provides for the first time a complete review of both the geology and biology of all extant coral areas in the Gulf, the water body between Iran and the Arabian Peninsula. In summer, this area is the hottest sea with abundant coral growth on earth and already today exhibits a temperature that is predicted to occur across the tropical ocean in 2100. Thus, by studying the Gulf today, much can be learned about tomorrow's world and the capability of coral reefs to adapt to climatic extremes. This volume provides the most authoritative and up-to-date review of the coral reefs in the Gulf. It can be used as a volume of general reference or as a textbook treating recent coral reefs. Written by local and international experts, the text is richly illustrated and will remain a standard

reference for the region for decades to come. Contributions stretch from climatology through geology, biology, ecological modelling and fisheries science to practical conservation aspects. The book is useful for the technical expert and casual reader alike.

Sim, Li-Chen. "Low-carbon energy in the Gulf: Upending the rentier state." *Energy Research & Social Science* 70 (2020): 101752.

The six Gulf monarchies are major stakeholders in the global energy system. Collectively, they account for one-quarter of global oil production, comprise the biggest source of oil exports, and are responsible for one-third of internationally traded gas. However, the ongoing transformation of this energy system towards a low-carbon one will have profound consequences for them in terms of geopolitical considerations and domestic rentier arrangements. This article focuses on the latter, which has received far less attention. Falling between the nexus of the 'rentier state' and the political economy of low-carbon energy, the article seeks to determine the extent to which the increasing deployment of low-carbon energy in the Gulf may mitigate against the effects of the hydrocarbon-fuelled 'resource curse'. These are associated with revenue volatility, jobs, and the private sector. The argument advanced here is that low-carbon energy will likely reinforce pre-existing rentier states and their development challenges. In this connection, the increasing uptake of low-carbon energy contributes to the survival of resource-rich Gulf monarchies.

Sinno, Nadine A. "The greening of modern Arabic literature: An ecological interpretation of two contemporary Arabic novels." *Interdisciplinary Studies in Literature and Environment* 20, no. 1 (2013): 125–43.

The movement toward writing, analyzing, and promoting environmentally aware literature, which started most visibly in western academia, is fast becoming an international phenomenon such that it is only fitting to make a serious effort at incorporating non-western voices in ecocritical studies. As an Arab scholar writing and teaching in the USA, I am especially interested in advocating for the participation of Middle Eastern scholars in this emerging field that combines many scholars' universal passion and concern for literature and the natural world. The project of incorporating Arab voices, however, is a two-way street. It requires a genuine cooperation between Arab scholars and writers who are interested in environmental scholarship and existing ecocriticism scholars, writers, and editors in the West. In

other.

Solomon, Hussein, and Arno Tausch. "Overcoming the environmental challenge in the MENA region," In *Arab MENA Countries: Vulnerabilities and Constraints Against Democracy on the Eve of the Global COVID-19 Crisis: Perspectives on Development in the Middle East and North Africa (MENA) Region*, 233–44. Singapore: Springer Singapore, 2021.

The triple challenge of climate change, increasing populations and rapid urbanization is creating unique challenges to MENA countries. Whilst coastal cities like Alexandria risk falling into the sea due to rising sea levels, the Dead Sea is drying up and Jeddah experiences annual floods. The challenges are made worse by government mismanagement through poor town and regional planning or looking for short-term solutions to waste-management as opposed to seeking more sustainable solutions. Environmental challenges can be mitigated through innovative forward-looking solutions with MENA states working in partnership with civil society, the private sector, neighbouring states, and international stakeholders such as the World Bank. Morocco's partnership with the World Bank and the private sector to arrive at a more sustainable waste management system, Jordan and Israel working together to save the Dead Sea, and the nascent promise of the Nile Basin Initiative are all different facets of attempts at overcoming environmental challenges posed.

Sörlin, Sverker. "Environmental Humanities: Why Should Biologists Interested in the Environment Take the Humanities Seriously." *BioScience* 62, no. 9 (2012): 788–89.

What do the humanities have to do with the environment? As they are commonly understood, environmental problems are issues that manifest themselves primarily in the environment itself. Natural scientists research these problems and suggest solutions, aided by technology, economics, and policy; it was bioscientists who defined the modern usage of the concept of the environment after World War II. Ecologist William Vogt famously used it in his 1948 volume *The Road to Survival*: "We live in one world in an ecological—an environmental—sense." He and others at the time thought of the environment as a composite of issues that had been in the making for some time— most prominently, population growth, which had been much discussed since the World Population Conference in Geneva in 1927, but also soil erosion, desertification (observed by Paul Sears in his famous 1935 book *Deserts on the March*), pollution, food, poverty, and starvation.

Sörlin, Sverker, and Paul Warde. "The Problem of the problem of environmental history: A re-reading of the field." *Environmental History* 12, no. 1 (2007): 107–30.

This essay argues that environmental history has not engaged as fully with social and political theory as it might, and that once it does, environmental historians will find that their concerns are, potentially, much closer to the mainstream of thought in the social sciences and humanities than they might have expected. In fact, environmental history has the promise to be central to the most influential social thought in the academy and among policy makers. The field also needs to consider the roles of knowledge and science, or "knowledge regimes," in translating scientific "facts" into politically realizable decisions

Sowers, Jeannie L. "Nature reserves and authoritarian rule in Egypt: Embedded autonomy revisited." *Journal of Environment and Development* 16, no. 4 (2007): 375–97.

This article explores how Egypt's system of authoritarian rule initially fostered and subsequently undermined nature conservation efforts. During the 1990s, international donors and local scientists established a well-managed network of nature preserves in the South Sinai region of Egypt. The concentration of state authority in a few executive institutions, such as the military and centrally appointed provincial governors, facilitated the creation of an effective management regime. However, these achievements have come under threat. Executive institutions charged with tourism development have challenged the authority of the protected areas division, and the capacity of the protected areas network has been undermined through systematic underinvestment and diversion of park revenues. In addition, local Bedouin communities that benefited from effectively managed parks remain politically marginalized. Although reformers in the authoritarian regimes of the Middle East can build environmental capacities, some of the economic and political logics associated with authoritarian rule limit the sustainability of these endeavors.

Sowers, Jeannie L. *Environmental politics in Egypt: Activists, experts and the state*. Routledge, 2012.

Drawing on extensive fieldwork conducted in Egypt from the late 1990s to 2011,

this book shows how experts and activists used distinctive approaches to influence state and firm decision-making in three important environmental policy domains. These include; industrial pollution from large-scale industry, the conservation of threatened habitat, and water management of the irrigation system. These cases show how environmental networks sought to construct legal, discursive, and infrastructural forms of authority within the context of a fragmented state apparatus and a highly centralized political regime. 'Managerial networks', composed of environmental scientists, technocrats, and consultants, sought to create new legal regimes for environmental protection and to frame environmental concerns so that they would appeal to central decision-makers. Activist networks, in contrast, emerged where environmental pollution or exclusion from natural resources threatened local livelihoods and public health. These networks publicized their concerns and mobilized broader participation through the creative use of public space, media coverage, and strategic use of existing state-sanctioned organizations. With the increased popular mobilization of the 2000s, and the mass protests of the 2011 revolution, environmental politics has become highly topical. Expert and activist networks alike have sought to broaden their appeal and diversify their approaches. The result may well be a more contested, participatory, and dynamic phase in Egyptian environmentalism.

Sowers, Jeannie L. "Water, energy and human insecurity in the Middle East." *Middle East Research and Information Project (MERIP)* 44, no. 271 (2014): 2-5, 48.

(En kort oversiktsartikkel som tegner et bilde av de viktigste konfliktlinjene og utfordringene, ikke fagfellevurder)

Demand for water in the Middle East and North Africa is rapidly increasing. Projected population growth alone through 2025 will lower per capita water availability by 30-70 percent over the next few decades, assuming that renewable water supplies remain constant, which is unlikely. Both policymakers and development agencies, however, routinely invoke indices of water stress that simply compare annual renewable water resources with population statistics to yield estimates of water availability per person. According to these criteria, most countries in the region have less than 1,000 cubic meters of water available per person per year. A more adequate measure of water risk, especially in terms of human security and wellbeing, is provided by programs like the Joint Monitoring Program for Water Supply and Sanitation (JMP), administered by UNICEF and the World Health Organization.

Sowers, Jeannie L. "Environmental activism in the Middle East: Prospects and challenges." *Humanities Futures Environmental Futures in the Middle East* (2017): 7, <https://humanitiesfutures.org/papers/environmental-activism-in-the-middle-east-prospects-and-challenges/>.

[article is adapted from Sowers, "Environmental activism in the Middle East and North Africa", in *Political Ecology of the Middle East and North Africa*, ed. Verhoeven 2018]

Environmental activism has intensified across the Middle East and North Africa over the past few decades, focusing primarily on environmental issues that affect public health, livelihoods, and essential services. While intrusive security states limit information and stifle civil society, expanding educational opportunities, growing cities, and new means of communication have enabled environmental activism. This includes small-scale, informal, and localized activism to appropriate and demand access to natural resources and environmental services; the spread of environmental nongovernmental organizations (ENGO's); and the coordinated popular resistance campaign (hamla) that typically includes direct action, media outreach, and lobbying. State elites and official media often portray environmental mobilization as a threat to national security and state integrity, but sometimes tolerate it as an informal enforcement mechanism to pressure polluting firms and nonresponsive officials. As elsewhere, state and corporate actors also increasingly deploy their own discourses and interventions around environmental issues, generally focused on technocratic solutions rather than questions of political economy and environmental justice.

Sowers, Jeannie L. "Understanding climate vulnerability in the Middle East and North Africa." *International Journal of Middle East Studies* 51, no. 4 (2019): 621–25.

Sowers, Jeannie L, Avner Vengosh, and Erika Weinthal. "Climate change, water resources, and the politics of adaptation in the Middle East and North Africa." *Climatic Change* 104, no. 3-4 (2011): 599–627.

(En lengre, detaljert fagfelleurdert artikkel om manglende "adaptation" til vannkriser fra MENA-myndigheter)

Through an examination of global climate change models combined with

hydrological data on deteriorating water quality in the Middle East and North Africa (MENA), we elucidate the ways in which the MENA countries are vulnerable to climate-induced impacts on water resources. Adaptive governance strategies, however, remain a low priority for political leaderships in the MENA region. To date, most MENA governments have concentrated the bulk of their resources on large-scale supply side projects such as desalination, dam construction, inter-basin water transfers, tapping fossil groundwater aquifers, and importing virtual water. Because managing water demand, improving the efficiency of water use, and promoting conservation will be key ingredients in responding to climate-induced impacts on the water sector, we analyze the political, economic, and institutional drivers that have shaped governance responses. While the scholarly literature emphasizes the importance of social capital to adaptive governance, we find that many political leaders and water experts in the MENA rarely engage societal actors in considering water risks. We conclude that the key capacities for adaptive governance to water scarcity in MENA are underdeveloped.

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Stamatopoulou-Robbins, Sophia Chloe. "An uncertain climate in risky times: How occupation became like the rain in post-Oslo Palestine." *International Journal of Middle East ...* (2018):

Recent Palestinian Authority (PA) initiatives to help Palestine adapt to climate change help shine light on the role that climate uncertainties play in how political futures can be represented. UN-led adaptation has occasioned opportunities for new networks of actors to make claims about Palestinian futures and to perform PA readiness for statehood. These actors weigh scientific uncertainties about climate against uncertainties over if and when settler colonialism in Palestine will end. How they do so matters because it is the foundation of requests for capital that could be translated into some of the most important institutions and infrastructures of Palestinian governance over the next several years, including those that provide Palestinians with access to water. It also matters because it constitutes the image with which PA officials represent what needs to be "fixed" in Palestine in important international forums such as the UN. Climate change adaptation is a new approach to the management of uncertain environmental futures. This analysis offers insight into how this approach shapes and is shaped by practices of statecraft in places marked by the volatilities of war, economic crisis, and occupation.

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Stevens, Michelle, and Hamid K. Ahmed. "Eco-cultural restoration of the

Mesopotamian marshes, southern Iraq,” In *Human dimensions of ecological restoration*, edited by Dave Egan, Evan Hjerpe, E, and Jesse Abrams, 289–98. Washington, DC: Island Press/Center for Resource Economics, 2011.

If there is hope for restoring the Mesopotamian marshes of southern Iraq and Iran, it lies with two key elements: the indigenous Marsh Arabs and the availability of water. The supply of consistent water is largely a political issue between the various countries within the Tigris-Euphrates watershed. For their part, the Marsh Arabs have a long and intimate connection between a functioning marsh ecosystem and their own cultural identity. This deep bond is expressed well by the Iraqi poet, Dr. Rasheed Bander al-Khayoun

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Swain, Ashok, and Anders Jägerskog. *Emerging security threats in the Middle East: The impact of climate change and globalization*. Lanham, MD: Rowman & Littlefield, 2016.

Increasingly the Middle East and its growing population face a highly complex and fragile security system. The rich deposits of natural resources, such as oil and gas, suffer from a strained renewable resource base that includes water and arable land. This leads to water scarcity, desertification, and land degradation. Increasing population, industrialization, and urbanization put more and more demand on the food supply. Energy insecurity may not be generally associated with the Middle East, but the countries in the eastern Mediterranean part have been traditionally vulnerable to it as their fossil fuel endowments have been low. Another issue is the large-scale temporary labor migration and the large number of forced migrants, refugees, and internally displaced persons. The book analyzes these emerging security challenges in a comprehensive and systematic manner. It draws national and regional security issues into both the global security and human security perspectives.

TOC

Chapter 1: Introduction: Middle East and Its New Sources of Insecurity

Understanding Security in the Middle East

Study of Security in the Middle East

The Middle East Region

International Actors and Regional Security in the Middle East

The Rise and Fall of the ‘Arab Spring’ and the Rise of the ISIS

Future Security Threats: Emerging Scenarios

Chapter 2: Achieving Food Security: A Critical Challenge

Increasing Food demand in the Region

Import and Export of Water from the Region

Land Investments as a Strategy to Address Food Security

Climate Change, Water Availability and Food Production

Concluding Thoughts

Chapter 3: Water Scarcity: Threat to Peace and Stability

Water Scarcity and Water Governance in the Middle East

Supply versus Demand Side Solutions

High Degree of Shared Water Resources

New Trends in the Region – The Use of Water as a Weapon

Connecting to Security Architecture

Chapter 4. Energy Security and its Changing Dynamics in the Middle East

Exporters of Crude Oil and Natural Gas

Importers of Crude Oil and Natural Gas

New Challenges and New Discoveries

Moving out of Oil and Gas Trap

Relying on Renewables

Evaluating Region's Energy Security Scenario

Chapter 5: Managing Large Population Migration

Importance of Remittances and Challenges of Foreign Workers

The Middle East: The Region of and for Refugees

Migrants in the Middle East: More as Peace Wreckers than Peace Makers

Chapter 6: Conclusion – In Search of Sustainable Regional Security

Four Fault Lines in Regional Security Structure

Identifying Immediate Security Risks

Region to Regain the Initiative

Tagliapietra, Simone. "The impact of global decarbonization policies and technological improvements on oil and gas producing countries in the Middle East and North Africa." *IEMed: Mediterranean yearbook* 2018 (2018): 303–8.

The adoption and quick entry into force of the Paris Agreement marked a major step forward in international efforts to address global warming. For the first

time, developed and developing countries committed to act in order to limit global average temperature increase to well below 2 C, and to pursue efforts to further limit this to 1.5 C above pre-industrial levels. This should reinforce strong decarbonization measures already being undertaken in different parts of the world, such as in Europe. Meanwhile, technological improvements have significantly increased the cost-competitiveness of low-carbon technologies such as solar and wind power generation, power storage technologies and electric vehicles (IRENA, 2017). This has already started to reshape the global energy system, notably by giving a greater role to solar and wind in the power generation mix. Global energy outlooks generally see these

trends as continuing in the future. Some outlooks even see these trends further accelerating, leading to a peak in global oil demand in the 2020s.

By transforming the global energy architecture, international decarbonization policies and technological advancements could have an impact on the world's key oil and gas producing regions, such as the MENA.

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Tausch, Arno. "Globalization, the environment and the future 'greening' of Arab politics." (2015): 64, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2608958.

The pressures of globalization, rising ecological footprint and shrinking biocapacity and concomitant global value change will contribute towards an increase of the importance of environmental issues in the Arab world in the coming years. Without question, already the time series data from available indices-like the KOF-Index of Globalization (2015) and Ecological Footprint Network data on ecological footprint and biocapacity-all point in the direction that in objective terms the Arab World will be confronted by a synchronous increase of these phenomena in the coming years. In addition, the newly available opinion data from the recently released World Values Survey (6) for twelve members of the Arab League (Algeria, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Palestinian Territories, Qatar, Tunisia, and Yemen), containing almost 70% of the population of the countries of the Arab League show to us that membership rate environmental organizations, participation in environmental demonstrations and giving priority to protecting the environment over economic growth are already a factor in those countries. Their weight will increase in the years to come, given the general and very robust underlying tendencies.

Our article analyzes the empirical relationship between rising globalization and ecological performance by establishing the global long-term, structural macro-

quantitative determinants of environmental performance in the world system with cross-national data. In multiple standard OLS regression models, we test the effects of 26 standard predictor variables, including the 'four freedoms' of goods, capital, labor and services, whose weight will all increase in the Arab world in the coming years, on the following indicators of sustainable development:

-Avoiding net trade of ecological footprint gha per person

-Carbon emissions per million US dollars GDP

-CO₂ per capita

-Yale/Columbia Environmental Performance Index (EPI)

-Global footprint per capita

-Happy Life Years

-Happy Planet Index

-ln (number of people per mill inhabitants 1980-2000 killed by natural disasters per year¹)

Our research shows that the apprehensions of quantitative research, critical of neo-liberal globalization are fully vindicated by the significant negative environmental effects of the foreign savings rate. High foreign savings are indeed a driver of global footprint, and are a blockade against a satisfactory Happy Planet Index performance. The new international division of labor is one of the prime drivers of high CO₂ per capita emissions. The penetration of economies by foreign direct investments by transnational corporations, which is the master variable of most quantitative dependency theories (MNC penetration), blocks environmental performance (EPI-Index) and several other socially important processes. Worker remittances have a significant positive effect on the Happy Planet Index, and Happy Life Years.

In attempting to draw some cautious predictions for the Arab World, the article then evaluates the performance of the Arab countries in this context with our cross-national data and with our analysis of World Values Survey (6) data for the region. While the documented data for the region from the Yale/Columbia EPI Index, which is the best single-shot available global environmental quality indicator today, and the

Ecological Footprint Network time series data about rising ecological footprint and shrinking biocapacity in the Arab countries clearly indicate the sharply mounting and pressing environmental policy priorities in the region, the “greening” of Arab civil societies towards a higher degree of environmental consciousness and activism already is also becoming a considerable factor. The overall publics in Qatar and Libya are in the lead, while in the other Arab countries, environmental policy issues will gain considerably in importance in the public mindset as well. Decision makers would be well advised to channel already now these future environmental debates and movements to be expected in a way compatible with the overall well-being, prosperity, democratization and stability of the region.

Terraon-Pfaff, Julia, Thomas Fink, Peter Viebahn, and El Mostafa Jamea. “Social impacts of large-scale solar thermal power plants: Assessment results for the NOORO II power plant in Morocco.” *Renewable and Sustainable Energy Reviews* 113 (2019): 109259.

Many countries are increasingly investing in renewable energy technologies to meet growing energy demands and increase the security of their energy supply. This development is also evident in the Middle East and North Africa (MENA) region, where renewable energy targets and policies have evolved rapidly in recent years. There is a steady increase in both the number of planned and implemented solar photovoltaic (PV) but also of solar thermal projects in form of Concentrating Solar Power (CSP) plants. Many of these installations are designed as large utility-scale systems. Despite the fact that these types of large-scale projects can have significant effects on local communities and their livelihoods, the existing research into the social impacts of such large-scale renewable energy infrastructures at local level is limited. However, assessing and managing these impacts is becoming increasingly important to reduce risks to both the affected communities and to the project and businesses activities. In order to provide more robust evidence on the local effects, this research study reviews the social impacts of large-scale renewable energy infrastructure in the MENA region based on a case study of the NOORO I CSP plant in Ouarzazate, Morocco. Data collected during two empirical field studies, in combination with expert interviews and secondary data analysis, provides detailed evidence on the type and significance of livelihood impacts of the NOORo I CSP plant. The analysis results in a consolidated list of 30 impacts and their significance levels for different stakeholder groups including farmers, young people, women, community representatives and owners of small and medium enterprises. The results show that, overall, the infrastructure development was received positively. The

review also indicates that factors identified as having effects on the sustainability of local livelihoods are mainly related to information management and benefit distribution, rather than physical or material aspects.

Tienhaara, Kyla. "Varieties of green capitalism: economy and environment in the wake of the global financial crisis." *Environmental Politics* 23, no. 2 (2014): 187–204.

In the wake of the global financial crisis, interest in the relationship between the economy and the environment substantially increased. Several proposals emerged between 2008 and 2012 for the creation of a 'Green New Deal', 'Green Stimulus', and a 'Green Economy'. These proposals are often conflated with one another under the rubric of 'green capitalism', but there are important distinctions to be made between them. Each suggests a different role for the state in regulating the market and the financial sector (i.e. they suggest different models of capitalism). The proposals can also be distinguished by the positions taken on ecological modernisation (i.e. they put forward different models of 'greenness'). Recognition that there are varieties of green capitalism being mooted increases the opportunities for more targeted critiques of each model and enables a more constructive debate about the options for creating sustainable economies in the developed world.

Tolba, Mostafa Kamal, and Najib W Saab, eds. *Arab environment: future challenges*. Arab Forum for Environment and Development, 2008.

Tolba, Mostafa Kamal, and Najib W Saab, eds. *Arab environment: Climate change. Impact of climate change on Arab countries. 2009 Report of the Arab Forum for Environment and Development*. Beirut: Arab Forum for Environment and Development (AFED), 2009.

Tveit, Sjur Kristian Moen. "Why Jihadis care about water: An exploration of Jabhat al-Nusra's jihadi hydro-governance," diss., University of Oslo, 2019.

The aim of this study is to address how and why Jabhat al-Nusra, an al-Qaida

affiliate group, provided water related public services or what I have labeled jihadi hydro-governance, during the war in Syria. Before doing so, I highlight some pre-existing and developing variables which affected their governance strategies, such as the effects of climate change, mismanagement of water resources by the state prior to 2011 and how war effects water infrastructure. The provision of water had to be addressed by Jabhat al-Nusra during their presence in the Syrian civil war, 2011-2016. Unlike other resources, there is no substitute for water. Hence, without sufficient water supply for drinking, cooking, sanitation and so forth, the civilians living in the areas under their control the, could not have survived for over eight years. This raises the question to how Jabhat al-Nusra used water as a tool of governance during the Syrian civil war.

Existing research on water management and conflict tend to include a state-centric focus and neglect one specifically for non-state armed actors(NSAAs). As this study shows, NSAAs during conflict, if they have the capacity and the experience, manage water in accordance to the context of which they find themselves in.

Through analysing al-Nusra made audio-visual material, social media usage, NGO reports, interviews with water experts operating in Syria and two locals from Raqqa, I discovered that the evolution of al-Nusra's governance, the means in which the group tackled the problems regarding delivering basic services and their cooperation with outside actors, to meet the needs of the civilians, can provide an indication on the importance of water in the eyes of al- Nusra. Additionally, I address the level of which their hydro-governance has been Islamized, by highlighting the matter of distribution practices.

United Nations Economic and Social Commission for Western Asia (ESCWA), Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD) of the League of Arab States, Food and Agriculture Organization of the United Nations (FAO), Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), League of Arab States, Swedish Meteorological and Hydrological Institute (SMHI), United Nations Environment Programme (UN Environment), United Nations Educational, Scientific and Cultural Organization (UNESCO) Office in Cairo, United Nations Office for Disaster Risk Reduction (UNISDR), United Nations University Institute for Water, Environment and Health (UNU-INWEH), and World Meteorological Organization (WMO). *Arab climate change assessment report*. Beirut: United National Economic and Social Commission for Western Asia (ESCWA): Regional Initiative for the Assessment of Climate Change Impacts on Water Resources and Socio-Economic Vulnerability in the Arab Region (RICCAR), 2017.

The Arab Climate Change Assessment Report was prepared within the framework of the Regional Initiative for the Assessment of Climate Change Impacts on Water Resources and Socio-Economic Vulnerability in the Arab Region (RICCAR). The publication consists of a Main Report and Technical Annex.

The Main Report presents a comprehensive picture of the impact that climate change is expected to have on freshwater resources in the Arab region until the end of the century and how this will affect the vulnerability of water resources, agriculture, natural ecosystems, human settlements and people. Case studies findings examining flood frequency, droughts, crop productivity and human health are summarized in the report. These case studies are elaborated in technical reports that complement this main report.

The Technical Annex provides a comprehensive presentation of the maps used to support the analysis presented in the Main Report.

RICCAR is implemented through a collaborative partnership involving 11 implementing partner organizations, namely the League of Arab States, the Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD), the Food and Agriculture Organization of the United Nations (FAO), Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), the Swedish Meteorological and Hydrological Institute (SMHI), the United Nations Environment Programme (UN Environment), the United Nations Educational, Scientific and Cultural Organization (UNESCO) Cairo Office, the United Nations Office for Disaster Risk Reduction (UNISDR), the United Nations University Institute for Water, Environment and Health (UNU-INWEH), and the World Meteorological Organization (WMO), and is coordinated by ESCWA. In addition to the resources provided by the partner agencies, funding is provided by the Swedish International Development Cooperation Agency (Sida) and the German Federal Ministry for Economic Cooperation and Development (BMZ), which financially supports RICCAR through the Adaptation to Climate Change in the Water Sector in the MENA Region (ACCWaM) project.

United Nations. *United Nations framework convention on climate change*. New York: United Nations, 1992.

Vakulchuk, Roman, Indra Overland, and Daniel Scholten. "Renewable energy and geopolitics: A review." *Renewable and Sustainable Energy Reviews* 122 (2020): 109547.

Highlights:

- Contrary to many claims, the geopolitics of renewables is not a new field of research.
- Renewables may cause more small-scale conflicts but reduce the risk of large conflicts.
- The field lacks systematic empirical, theoretical and analytical frameworks.
- The literature does not distinguish between different renewable energy sources.
- More research is needed on how petrostates will be affected by their decline.

Abstract: This article reviews the literature on the geopolitics of renewable energy. It finds that while the roots of this literature can be traced back to the 1970s and 1980s, most of it has been published from 2010 onwards. The following aggregate conclusions are extracted from the literature: renewable energy has many advantages over fossil fuels for international security and peace; however, renewable energy is thought to exacerbate security risks and geopolitical tensions related to critical materials and cybersecurity; former hydrocarbon exporters will likely be the greatest losers from the energy transition. Many of the reviewed publications share some weaknesses: a failure to define "geopolitics"; an unwarranted assumption that very little has been published in the field previously; limited use of established forecasting, scenario-building or foresight methodologies; a lack of recognition of the complexity of the field; a lack of theorisation. Most authors do not distinguish between the geopolitical risks associated with different types of renewable energy, and only a few distinguish clearly between the geopolitics of the transitional phase and the geopolitics of a post-energy transition world. A disproportionately large part of the literature is dedicated to critical materials and cybersecurity, while only a small part concerns the decline of former fossil fuel powers. Among those publications that do discuss the decline of fossil fuels, there is also an over-focus on oil producers and a lack of attention to the countries that rely heavily on coal, for example Australia, China, Germany, Indonesia, Poland and the United States.

Verhoeven, Harry. "Climate change, conflict and development in Sudan: global neo-

Malthusian narratives and local power struggles.” *Development and Change* 42, no. 3 (2011): 679–707.

Dystopian accounts of climate change posit that it will lead to more conflict, causing state failure and mass population movements. Yet these narratives are both theoretically and empirically problematic: the conflict-environment hypothesis merges a global securitization agenda with local manipulations of Northern fears about the state of planetary ecology. Sudan has experienced how damaging this fusion of wishful thinking, power politics and top-down development can be. In the 1970s, global resource scarcity concerns were used locally to impose the *fata morgana* of Sudan as an Arab-African breadbasket: in the name of development, violent evictions of local communities contributed to Sudan’s second civil war and associated famines. Today, Darfur has been labelled ‘the world’s first climate change conflict’, masking the long-term political-economic dynamics and Sudanese agency underpinning the crisis. Simultaneously, the global food crisis is instrumentalized to launch a dam programme and agricultural revival that claim to be African answers to resource scarcity. The winners, however, are Sudan’s globalized Islamist elites and foreign investors, whilst the livelihoods of local communities are undermined. Important links exist between climatic developments and security, but global Malthusian narratives about state failure and conflict are dangerously susceptible to manipulations by national elites; the practical outcomes decrease rather than increase human security. In the climate change era, the breakdown of institutions and associated violence is often not an unfortunate failure of the old system due to environmental shock, but a strategy of elites in wider processes of power and wealth accumulation and contestation.

Verhoeven, Harry, ed. *Environmental politics in the Middle East*. London: Hurst (Published in Collaboration with: Georgetown University Centre for International and Regional Studies, School of Foreign Service), 2018.

This book investigates how ecology and politics meet in the Middle East and how those interactions connect to the global political economy. Through region-wide analyses and case studies from the Arabian Peninsula, the Gulf of Aden, the Levant and North Africa, the volume highlights the intimate connections of environmental activism, energy infrastructure and illicit commodity trading with the political economies of Central Asia, the Horn of Africa and the Indian subcontinent. The book’s nine chapters analyse how the exploitation and representation of the environment have shaped the history of the region--and determined its place in

global politics. It argues that how the ecological is understood, instrumentalised and intervened upon is the product of political struggle: deconstructing ideas and practices of environmental change means unravelling claims of authority and legitimacy. This is particularly important in a region frequently seen through the prism of environmental determinism, where ruling elites have imposed authoritarian control as the corollary of 'environmental crisis'. This unique and urgent collection will question much of what we think we know about this pressing issue.

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TOC:

Introduction: The Middle East in Global Environmental Politics Harry Verhoeven

1. Environmental Activism in the Middle East and North Africa Jeannie Sowers
2. Tunisian Phosphates and the Politics of the Periphery Francis Ghilès and Eckart Woertz
3. The Securitization of Oil and Its Ramifications in the Gulf Cooperation Council States Jill Crystal
4. Greening Gulf Landscapes: Economic Opportunities, Social Tradeoffs and Sustainability Challenges Ali Al-Keblawy
5. Burning Somalia's Future: The Illegal Charcoal Trade between the Horn of Africa and the Gulf Ilya Gridneff
6. Illegal Fishing and Piracy in the Horn of Africa: The Role of the MENA Region Afyare Elmi
7. Learning Geopolitical Pluralism: Toward a New International Oil Regime? Clement Henry
8. Scarcity Drives Economic Development: The Effect of Energy Subsidies on Export Diversification in the Middle East Wessel N. Vermuelen
9. The Politics of Natural Resources in the Caspian Sea: A New Great Game in an Ancient World Abbas Maleki

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Review by Jon Nordenson:

«[...] I introduksjonen kritiserer Verhoeven det han mener er en tendens til å analysere miljøspørsmål isolert fra øvrige sosiale og politiske forhold i regionen. Boken søker derfor å undersøke hvordan lokale forhold er med å påvirke forståelsen av viktige miljøspørsmål. I forlengelse av dette vil den også vise hvordan miljøspørsmål ikke kun er tekniske eller økonomiske problemer, men at de også utgjør sosiale, politiske og sikkerhetsmessige utfordringer. Etter en god diskusjon av ulike tilnærminger til, og kategoriseringer av, miljødiskurser presenteres politisk økologi som bokens sentrale konsept. I dette ligger erkjennelsen av at «miljøet ikke kan skilles fra menneskelige konseptualiseringer av det», og følgelig må forhold knyttet til eksempelvis makt, politisklegitimitet, sosial endring, verdier og våre forestillinger om naturen gis en sentral plass i analyser av miljø, klima og det grønne skiftet. Dette er perspektiver som i liten grad er dekket i den eksisterende litteraturen om miljøspørsmål i Midtøsten, og bokens tilnærming er således både svært interessant og sårt tiltrengt. Antologien inneholder flere interessante bi-drag. Jeannine Sowers kapittel om miljøaktivisme i regionen gir en god oversikt over arbeidet som gjøres i ulike land, hvilke temaer som skaper mest engasjement og hvilke utfordringer miljøorganisasjoner står overfor. Situasjonen er ofte lik den andre ikke-statlige organisasjoner møter, og ofte er det myndighetene som utgjør det største problemet – med mindre man tilhører en av de mer offisielle miljøorganisasjonene, med trykk på «offisiell» snarere enn «miljø». Dessverre stopper kapittelet i grunnen der, og forblir deskriptivt. Det gir få svar på hvorfor disse gruppene oppstår, hvordan de arbeider eller hvorfor det er nettopp disse temaene som engasjerer. Videre er det flere kapitler som både er svært interessante og leservennlige, men som ikke nødvendigvis er plassert innenfor den rammensom skisseres i introduksjonen. Dette anerkjenner også Verhoeven, men argumenterer samtidig for at de i det minste er farget av tilnærmingen han skisserer innledningsvis. Jill Crystal skriver svært konsist om «sikkerhetifiseringen» av oljespørsmålet i Golfen, men miljøperspektivet (eller den menneskelige faktoren) er til tider vanskelig å få øye på. Ali El-Keblawy skriver engasjerende om ulike prosjekter og initiativer for å gjøre Golf-landene grønnere, og selv om miljøfokuset her er relativt tydelig, er perspektivet først og fremst teknisk. Wessel N. Vermeulens kapittel om subsidier og økonomisk diversifisering er svært interessant, men blir igjen noe teknisk. Et annet problem er at bokens bidrag peker i mange retninger. Geografisk dekket et svært stort og i liten grad definert område: fra Tunisia og Egypt til Golfen, Somalia og Afrikas horn, og videre til Det kaspiske hav. Dette ville i og for seg ikke vært et stort problem om det tematiskefokuset var klart, men også her er variasjonen stor: fra fosfatgruver og spørsmål om utvikling og rett-

ferdighet i Tunisia til sikkerhetspolitikk i Golfen og tekniske spørsmål knyttet til et grønnere land-skap i Emiratene. Når begge elementene inneholder såpass mye variasjon, er det vanskelig å følge en rød tråd. Boken inneholder da heller ikke noen oppsummerende konklusjon. På sett og vis illustrerer dette noe uklare fokuset problemkomplekset man står overfor i regionen (og globalt). Det er mangefasettert og komplekst, mange ulike forhold vil påvirke hverandre, og det er vanskelig å gjøre klare geografiske avgrensninger. Det gjør det desto viktigere med litteratur som nettopp klarer å trekke frem det essensielle, å identifisere sammenhenger som kan være vanskelig å få øye på, og som gjør et omfattende og komplisert materiale tilgjengelig og forståelig. Her lykkes boken dessverre bare delvis. Like fullt er dette en bok som trekker opp helt sentrale problemstillinger som foreløpig har fått alt for liten oppmerksomhet, og gjøresåledes et viktig arbeid for å stake ut en kurs for videre forskning.» (Babylon 17(2) 2020)

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Verner, Dorte, ed. *Adaptation to a changing climate in the Arab countries : a case for adaptation governance and leadership in building climate resilience*. Washington, DC: World Bank, 2012.

Adapting to climate change is not a new phenomenon for the Arab world. For thousands of years, the people in Arab countries have coped with the challenges of climate variability by adapting their survival strategies to changes in rainfall and temperature. Their experience has contributed significantly to the global knowledge on climate change and adaptation. But over the next century global climatic variability is predicted to increase, and Arab countries may well experience unprecedented extremes in climate. Temperatures may reach new highs, and in most places there may be a risk of less rainfall. Under these circumstances, Arab countries and their citizens will once again need to draw on their long experience of adapting to the environment to address the new challenges posed by climate change. This report prepared through a consultative process with Government and other stakeholders in the Arab world assesses the potential effects of climate change on the Arab region and outlines possible approaches and measures to prepare for its consequences. It offers ideas and suggestions for Arab policy makers as to what mitigating actions may be needed in rural and urban settings to safeguard key areas such as health, water, agriculture, and tourism. The report also analyzes the differing impacts of climate change, with special attention paid to gender, as a means of tailoring strategies to address specific vulnerabilities. The socioeconomic impact of climate change will likely vary from country to country, reflecting a country's coping capacity and its level of development. Countries that are wealthier and more

economically diverse are generally expected to be more resilient. The report suggests that countries and households will need to diversify their production and income generation, integrate adaptation into all policy making and activities, and ensure a sustained national commitment to address the social, economic, and environmental consequences of climate variability. With these coordinated efforts, the Arab world can, as it has for centuries, successfully adapt and adjust to the challenges of a changing climate.

Vidal, John. "What does the Arab world do when its water runs out?" *The Guardian*, 2011.

Water usage in north Africa and the Middle East is unsustainable and shortages are likely to lead to further instability – unless governments take action to solve the impending crisis.

Vij, Mohit, and Anu Vij. "Tourism and carbon foot prints in United Arab Emirates – challenges and solutions." *Journal of Environmental Management and Tourism* 3, no. 1 (2012): 41.

The article brings into picture the tourism progression and its environmental consequences in a recently emerged international tourist destination, United Arab Emirates (UAE). The country attracted around 8 million tourists in the year 2008 and at the same time made to the news-lines for generating highest carbon footprints per capita in the world! The article intends to generate a comprehensive analysis on background of United Arab Emirates (UAE), its resources, infrastructure and relevance of developing tourism which is strongly emphasized on energy intensive "man made tourism resources". The article is divided into three sections to assess the challenges and solutions related to tourism and environment in the country. In the first section, an analysis is drawn on the background of United Arab Emirates (UAE), its resources, infrastructure and progression made in the tourism sector. At the same time a discussion is made on the prevailing environment problems in the country and its status in terms of environment performance with regard to other countries. The second section of the paper throws light over the attempts made by the UAE government and major tourism stakeholders to deal with the current situation. A summary of these attempts and environmental laws is also taken into consideration under this section. In the last section, three carbon mitigation methodologies have been identified which best suit the prevailing condition and requirements in the UAE.

A special investigation is also carried out to evaluate the business potential of these methodologies attracting the investors' interest

Vogt, Steffen, R Glaser, J Luterbacher, D Rieman, Gh Al Dyab, J Schoenbein, and E Garcia-Bustamante. "Assessing the medieval climate anomaly in the Middle East: The potential of Arabic documentary sources." *PAGES news* 19, no. 1 (2011): 28–29.

Vu, Hong Tien, Matthew Blomberg, Hyunjin Seo, Yuchen Liu, Fatemeh Shayesteh, and Hung Viet Do. "Social media and environmental activism: Framing climate change on Facebook by global NGOs." *Science Communication* (2020): 1075547020971644.

Analyzing Facebook content produced by 289 global climate nonprofits from 18 countries, this study investigates these NGOs' framing of climate change. Of the three protest frames, *diagnostic* was most popular. Of the three aspects of climate change, including *impact*, *action*, and *efficacy*, *action* was used most frequently, while efficacy was the least common. Messages refer to effects at the present time. NGOs from developed countries are more likely than those from developing nations to discuss climate *actions*. Climate *impacts* are more likely to appear in these NGOs' persuasive messages than *efficacy*. Theoretical and practical implications of the findings are discussed.

Vu, Hong Tien, Hung Viet Do, Hyunjin Seo, and Yuchen Liu. "Who leads the conversation on climate change?: A study of a global network of NGOs on Twitter." *Environmental Communication* 14, no. 4 (2020): 450–64.

Using a big data approach, this study investigates how climate change NGOs across the world connect and interact on Twitter. It found that despite being members of a global alliance that aims to organize concerted efforts to battle climate change, NGOs rarely connect or interact on Twitter. In addition, the Global North/South hierarchy is perpetuated in the network of these NGOs, with those from Global North and Oceania playing the role of opinion leaders on Twitter and dominating the conversations on climate change. Our social network analysis found that the network density is sparse, with a very low density. It also identified several

types of centralities, conceptualized as *connectivity*, as predictors of an organization's tweeting frequency and online opinion leadership. Practical and theoretical implications for interorganizational communication and online opinion leadership were discussed.

Waha, Katharina, Linda Krummenauer, Sophie Adams, Valentin Aich, Florent Baarsch, Dim Coumou, Marianela Fader, Holger Hoff, Guy Jobbins, Rachel Marcus, Matthias Mengel, Ilona M. Otto, Mahé Perrette, Marcia Rocha, Alexander Robinson, and Carl-Friedrich Schleussner. "Climate change impacts in the Middle East and Northern Africa (MENA) region and their implications for vulnerable population groups." *Regional Environmental Change* 17, no. 6 (2017): 1623–38.

The Middle East and North Africa (MENA) region emerges as one of the hot spots for worsening extreme heat, drought and aridity conditions under climate change. A synthesis of peer-reviewed literature from 2010 to date and own modeling work on biophysical impacts of climate change on selected sectors shows that the region is highly affected by present and future climate change. These biophysical impacts paired with other pressures and a lack of resilience in some countries cause high vulnerabilities within these sectors and for social dimensions in the MENA region. The agricultural sector, of which 70 percent is rain-fed, is highly exposed to changing climatic conditions. This is of critical importance as the agriculture sector is the largest employer in many Arab countries and contributes significantly to national economies. Impacts will be high in a 2 °C world, as, e.g., annual water discharge, already critically low, is projected to drop by another 15–45% (75% in a 4 °C world) and unusual heat extremes projected to affect about one-third of the land area with likely consequences for local food production. As a consequence, deteriorating rural livelihoods associated with declining agricultural productivity will continue to contribute to migration flows, often to urban areas as already observed. The region could be heavily challenged by both rising food and water demand given its projected increase in population that may double by 2070. As a result, the regions already substantial import dependency could increase and thus its vulnerability to agricultural impacts well beyond its country borders. A severe and sustained pressure on resources could contribute to further social unrest in the already unstable political environment that currently characterizes parts of the region. While the particular societal responses to such changes are hard to foresee, it is clear that extreme impacts would constitute unprecedented challenges to the social systems affected.

Walters, Jonathan. "An EU-MENA deal for green hydrogen could be a serious win-win." *International Politics and Society* (2020): <https://www.ips-journal.eu/topics/environment/eu-mena-hydrogen-4723>.

The EU's failed solar strategy saw China capture the market. It needs to not repeat the same mistake with green hydrogen

Waterbury, John. *The Political economy of climate change in the Arab region*. UNDP, 2013.

The policy process in the Arab world is poorly understood. That observation is even more pertinent with respect to policies aimed at adapting to climate change. Nonetheless, we can draw lessons from the literature on policy-making with respect to economic reform in the Arab world that bear upon the challenges political leaders face in undertaking adaptive measures to climate change. In short, the fiscal crises of the 1980s did elicit significant policy responses but more as a result of external pressures than of concern for domestic constituencies. That is the case as well with policies aimed at addressing climate-related challenges.

The Arab region has been characterized by pervasive authoritarianism with weak institutions of political accountability. That could mean that political leaders are relatively unconstrained in taking bold policy initiatives or relatively unmotivated to take risks. The evidence over the past decades indicates that inaction rather than action was the norm.

The Arab uprisings of 2011 may have begun to alter this picture of predominant authoritarianism. It is to be hoped that greater accountability in some Arab states may bring environmental issues more squarely to the front of the policy agenda. But we are in very early days, and even in countries such as Egypt and Tunisia where greater accountability of political leadership may become manifest, dealing with short-term economic crises may push environmental concerns to the near-bottom of the list of policy priorities. What could move them up the list are environmental crises, international pressure, and financial inducements and investments. These incentives will prove operative regardless of political regime.

I assess the influence of conventional sources of pressure on the policy process: lobbies, interest groups, public opinion, economic crisis, and the military-security apparatus. All are present and sometimes active in the Arab world. With the exception of the security apparatus, they have been ignored with impunity in the past. Working in favor of the environmental agenda are interlocking, transnational networks of experts, sometimes with significant financial resources, which keep

environmental issues in full policy view.

Despite the apparent urgency of the challenges facing the Arab region as a result of climate change, inaction is a viable political strategy and, in ways I attempt to specify, the most likely one. The Arab and MENA regions have long suffered from symptoms we associate with global warming. For that reason there are already in place an array of policy responses, legal infrastructure, as well as competent experts who understand the problems.

What is recommended, therefore, is to build on existing policies and expertise. Radical departures are not warranted nor feasible. Building on what exists avoids taking on the issues of authoritarianism and lack of accountability, as political leaders will be asked only to continue what they have been doing, but to do it better. If the Arab uprisings enhance accountability in specific countries, so much the better.

I identify a number of policies that have been well established and call for a careful regional assessment of their successes and failures with a view to improving them going forward. I also identify a number of policies that exist in embryonic form and need strengthening. Finally, I identify policies that are quite new, such as developing renewable energy sources, but which can be developed on the strength of existing expertise and experience. The guiding principle is to do what should be done even if there were no climate change.

It is often observed that mitigation is about energy and adaptation is about water. In the Arab region adaptation will be played out to a large extent in the agricultural sector where most of the water is used. Adaptation is also quintessentially political because it entails a range of social welfare effects. Typically a fifth or more of total employment is in the agricultural sector and the bulk of poverty is concentrated there. Political leaders may find themselves asking the poorest in their societies to bear the costs of adaptation.

It is important to remember that mitigation necessarily entails collective action if it is to have significant effects. By contrast adaptation can be undertaken at the national or even the regional level unilaterally and still have positive results. This is important for the Arab world because adaptation will be the dominant response to the challenges of global warming. Some adaptation challenges in the Arab world can only be met regionally, but the precedents for regional cooperation and trade are not encouraging. It is recommended that regional efforts be sharply focused, especially on sea level rise or desertification. Sharp focus may simplify cooperation and coordination. Because the MENA and Arab regions are not significant contributors to GHG emissions, and because efforts they undertake to adapt to warming may be overwhelmed by the failure of the main emitters to reduce their emissions, regional stakeholders will demand compensation for their adaptation efforts. I believe that the costs of compensation in the Arab world will not be prohibitive. By the same token I

cannot guarantee that compensation will always be put to the purposes for which it is intended.

Wehinger, Franziska, and Raad, Saad. "The MENA region's 'green hydrogen rush'." *International Politics and Society* (2020): <https://www.ips-journal.eu/regions/middle-east/the-mena-regions-green-hydrogen-rush-4540>.

Germany and the EU launched ambitious 'green' hydrogen plans. To satisfy demand, all eyes are now on the MENA region

Weinthal, Erika, and Jeannie Sowers. "The water-energy nexus in the Middle East: Infrastructure, development, and conflict." *Wiley Interdisciplinary Reviews: Water* (2020): e1437.

Water and energy are closely linked in the Middle East and North Africa (MENA) through coupled networks of infrastructure. This review explores the water-energy nexus of infrastructure to explicate different patterns of development and de-development in the MENA. First, the review highlights why states, donors, and firms have long built large-scale coupled water-energy infrastructures to provide urban services, expand irrigated agriculture, and foster development. Yet, too often the adverse social and environmental impacts from the construction of dams, water conveyance structures, groundwater mining, and desalination plants have been overlooked. We then examine the water-energy nexus through infrastructure for the most important users of water and energy in the MENA region: urban populations and the agricultural sector. Third, the review illustrates that while investments in water and energy infrastructure generated significant gains in human development for much of the region, the post-2011 wars reversed many of these development gains in conflict-affected countries through the destruction and deterioration of water energy infrastructures. The unprecedented displacement of populations within and across borders has also created new challenges for host communities, where infrastructures for providing water and energy services were already overstretched. The review further highlights the growing role of humanitarian assistance in providing water and energy services to refugees, internally displaced populations, and host communities. Overall, this review examines how the nexus of water and energy infrastructure shapes human security, livelihoods, and political economies in the MENA region.

White, Sam (1980-). *The climate of rebellion in the early modern Ottoman Empire*. New York: Cambridge University Press, 2011.

The Climate of Rebellion in the Early Modern Ottoman Empire explores the serious and far-reaching consequences of the Little Ice Age in Ottoman lands. This book demonstrates how imperial systems of provisioning and settlement that defined Ottoman power in the 1500s came unraveled in the face of ecological pressures and extreme cold and drought, leading to the outbreak of the destructive Celali Rebellion (1596–1610). This rebellion marked a turning point in Ottoman fortunes, as a combination of ongoing Little Ice Age climate fluctuations, nomad incursions, and rural disorder postponed Ottoman recovery over the following century, with enduring impacts on the region's population, land use, and economy.

White, Sam (1980-), Christian Pfister, and Franz Mauelshagen, eds. *The Palgrave handbook of climate history*. London: Palgrave Macmillan UK, 2018.

This handbook offers the first comprehensive, state-of-the-field guide to past weather and climate and their role in human societies. Bringing together dozens of international specialists from the sciences and humanities, this volume describes the methods, sources, and major findings of historical climate reconstruction and impact research. Its chapters take the reader through each key source of past climate and weather information and each technique of analysis; through each historical period and region of the world; through the major topics of climate and history and core case studies; and finally through the history of climate ideas and science. Using clear, non-technical language, *The Palgrave Handbook of Climate History* serves as a textbook for students, a reference guide for specialists and an introduction to climate history for scholars and interested readers.

Wodon, Quentin, and Andrea Liverani. "Climate change and migration in the MENA region." *MENA Knowledge and Learning* 129 (2014): 1–4.

Climate change and climate-induced migration (Foresight, 2011) are major global concerns. This is true for the MENA region as well. Yet empirical data on how perceptions of climate change and weather shocks affect migration in the region are scarce. To what extent are perceived and actual weather shocks and changes in the environment driving temporary and permanent migration flows? Do remittances

reach households living in climate poor areas, and if so, what is their impact on poverty and human development? These are some of the questions considered in a study by Wodon et al. (2014) based on various data sources including new household surveys for climate affected areas in Algeria, Egypt, Morocco, Syria, and Yemen (the five country sample in this note). In a short summary note as this one, it is important to be clear at the outset about what is measured and what is not. It is sometimes said that Climate is what we expect. Weather is what we get. Simply put, climate relates to the distribution of variables such as temperature and rainfall over a long period of time. This distribution is characterized by its moments, including the mean and the variance of key climatic variables. Climate change is then used to refer to the change in the distribution of rainfall and temperature. However, it is difficult to tell if the weather experienced at a point in time is due to climate change (the overall mean and variance of rainfall and temperature) or part of an existing distribution.

Wodon, Quentin, Andrea Liverani, George Joseph, and Nathalie Bougnoux, eds. *Climate change and migration: Evidence from the Middle East and North Africa*. Washington, DC: World Bank Publications, 2014.

Climate change is a major source of concern in the Middle East and North Africa (MENA) region, and migration is often understood as one of several strategies used by households to respond to changes in climate and environmental conditions, including extreme weather events. This study focuses on the link between climate change and migration. Most micro-level studies measure climate change either by the incidences of extreme weather events or by variation in temperature or rainfall. A few studies have found that formal and informal institutions as well as policies also affect migration. Institutions that make government more responsive to households (for example through public spending) discourage both international and domestic migration in the aftermath of extreme weather events. Migration is often an option of last resort after vulnerable rural populations attempting to cope with new and challenging circumstances have exhausted other options such as eating less, selling assets, or removing children from school. This study is based in large part on new data collected in 2011 in Algeria, Egypt, Morocco, Syria, and the Republic of Yemen. The surveys were administered by in-country partners to a randomly selected set of 800 households per country. It is also important to emphasize that neither the household survey results nor the findings from the qualitative focus groups are meant to be representative of the five countries in which the work was carried, since only a few areas were surveyed in each country. This report is organized as follows: section one gives synthesis. Section two discusses household perceptions about climate change

and extreme weather events. Section three focuses on migration as a coping mechanisms and income diversification strategy. Section four examines other coping and adaptation strategies. Section five discusses perceptions about government and community programs.

Wüstenhagen, Rolf, Maarten Wolsink, and Mary Jean Bürer. "Social acceptance of renewable energy innovation: An introduction to the concept." *Energy Policy* 35, no. 5 (2007): 2683–91.

This paper introduces the special issue on Social Acceptance of Renewable Energy Innovation. It is a collection of best papers presented at an international research conference held in Tramelan (Switzerland) in February 2006. While there are ambitious government targets to increase the share of renewable energy in many countries, it is increasingly recognized that social acceptance may be a constraining factor in achieving this target. This is particularly apparent in the case of wind energy, which has become a subject of contested debates in several countries largely due to its visual impact on landscapes. This paper introduces three dimensions of social acceptance, namely socio-political, community and market acceptance. Factors influencing socio-political and community acceptance are increasingly recognized as being important for understanding the apparent contradictions between general public support for renewable energy innovation and the difficult realization of specific projects. The third dimension, market acceptance, has received less attention so far and provides opportunities for further research, particularly from management scholars.

Zayed, Dina, and Jeannie L Sowers. "The campaign against coal in Egypt." *Middle East Report* 271, no. 44 (2014): 29–35.

A campaign opposing coal imports would seem unlikely to attract much attention given the political upheavals and deepening social polarization that Egyptians have witnessed over the past three years. Yet since 2012, a loose coalition of environmental and human rights activists, government officials and voluntary organizations have led a sustained campaign to contest the government's decision to import coal to supply Egypt's cement plants. Making use of new and old media, and drawing upon the "Tahrir networks" forged in street protests, the anti-coal coalition challenged government and business assertions that importing coal was the only way to meet Egypt's energy needs.

Activism against coal resonates with widespread concerns about pollution and the privileged treatment of big business, given that well-connected businessmen and foreign executives are seen to pay little for local labor and energy but sell cement on the Egyptian market at high international prices. Anti-coal activists also mobilized public support by linking closed cabinet sessions on coal policy to the revolutionary struggle for transparent and accountable government. With small and fragmented numbers, the anti-coal campaign is unlikely to prevent the Egyptian government from importing coal to support the cement industry. The campaign was, however, able to influence media coverage and official discourse on energy issues, framing government policy on energy in terms of popular concerns about social justice and corruption.

Zeino-Mahmalat, Ellinor, and Abdelhadi Bennis, eds. *Environnement et changement climatique au Maroc: Diagnostic et perspectives*. Rabat: Konrad-Adenauer-Stiftung EV, Bureau au Maroc, 2012.

Ziabari, Nima Bahrami, Samane Ghandehariun, and Marc A Rosen. "Social acceptance of renewable energy technologies in ecotourism facilities in Iran." *The 29th Annual International Conference of Iranian Society of Mechanical Engineers & 8th Conference on Thermal Power Plants* (2021):

Due to climate change phenomena, the transition of intercontinental energy supply provides opportunities and challenges for the economy. One salient factor in the economy often is the tourism industry. The scarcity of studies of the relationship between the tourism industry and renewable energy exhorts more studies to inquire about their relationship. The main objective of this paper is to analyze the viability of integrating ecotourism residences with renewable energy resources from the social perspective. An online questionnaire is prepared with three categories of questions including personal information, climate change awareness, and inclination to pay for renewable-integrated ecotourism residences. Wind turbines are selected for consideration in this study. The results show that, with the growth of social media's influence on daily life, people are increasingly encouraged to participate in protecting the environment. It is also shown that people who use social media consistently are willing to pay for and promote renewable integrated ecotourism residences.

Zobeidi, Tahereh, Nadejda Komendantova, and Masoud Yazdanpanah. "Social media as a driver of the use of renewable energy: The perceptions of instagram users in Iran." *Energy Policy* (2021): 112721.

Despite political drivers, available solar and wind potentials, and other driving factors, the share of renewable energy sources in Iran's energy mix remains small. Many factors are perceived as barriers to the use of renewable energy sources and therefore influence the willingness of private households in Iran to use this kind of energy. We argue that social media not only plays an increasingly important role in perceptions of various technologies but also influences people's intentions. Therefore, our aim in this study is to understand whether and how social media influences people's intentions to use renewable energy sources. The research sample includes users of Instagram who are interested in and following information being posted on renewable energy sources. The methodology includes the use of a modified version of the extended parallel process model that includes attitude, intention, and trust in social media. The results of structural equation modeling show that the perceived risk of climate change significantly affects respondents' intention to use renewable energies. Also, perceived self-efficacy has a significant impact on attitude, intention, and use of renewable energy. Government agencies can increase the likelihood that household energy consumers will use renewable energy by using trusted channels to deliver necessary messages about the harms of using traditional energy and the low cost and ease of using renewable energy.

Zyadin, Anas, Antero Puhakka, Pirkkoliisa Ahponen, Tarja Cronberg, and Paavo Pelkonen. "School students' knowledge, perceptions, and attitudes toward renewable energy in Jordan." *Renewable Energy* 45 (2012): 78–85.

The aim of this survey study is to investigate the level of awareness and prevailing attitudes of schoolstudents toward renewable energy (RE) in a country which is heavily reliant on fossil fuels despite having high RE resources. The importance of this study stems from the need to better understand the role of education in cultivating awareness of RE, which is necessary for the students to become future responsible energy consumers. To that end, we developed a suitable questionnaire. In total, 617 respondents from both rural and urban areas filled in the questionnaire. Our results indicate that students have limited ability to distinguish renewable from non-renewable energy sources despite many respondents being

aquainted with the common RE sources like solar and wind. Furthermore, over 50% of students are unaware of biofuels such as biodiesel and bioethanol. Nevertheless, 87% of students consider RE to be a viable future energy option, and generally exhibit a positive attitude and willingness to adopt RE even at high prices. Overall, young females appear to be more acquainted with RE than young males. Likewise, students studying in urban areas are more aware of RE and more strongly support their adoption, in comparison to rural students, who show a preference for nuclear energy. This study high- lights the importance of implementing RE education as early as possible to encourage RE development, which is necessary to alleviate the risk from fossil fuel-related environmental problems.

أندريس, أنهوسير, and, أيدان, فروو. "معدلات تلوث الهواء بثاني أكسيد النيتروجين (NO₂) تعود الى ما كانت عليه قبل جائحة كورونا في مدن الشرق الأوسط وشمال إفريقيا." (2021): 54 , <https://www.greenpeace.org/static/planet4-mena-stateless/2021/12/7f833d77-gp-ar-rebound-report-no2-2021.pdf>.

سجّل تلوث الهواء بثاني أكسيد النيتروجين no₂ انخفاضاً ملحوظاً في خلال فترة الإغلاق التام في العام 2020 مقارنة بالسنوات السابقة في جميع المناطق المشمولة في الدراسة باستثناء مصر، وفقاً لبيانات الأقمار الصناعية. وقد عاد التلوث بثاني أكسيد النيتروجين إلى مستويات ما قبل الجائحة أو أعلى في العام 2021 في 13 مدينة من أصل 16.

ولأن منطقة الشرق الأوسط وشمال أفريقيا مثلها كمثل معظم مناطق العالم تعتمد بشكلٍ كبيرٍ على حرق الوقود الأحفوريّ لتوليد الطاقة والنقل والعمليات الصناعية، فمع توقف هذه الأنشطة اختلفت مستويات التلوّث.

وبما أنه لا يمكن تحديد عبر الأقمار الصناعية حجم تركيز كميات ثاني أكسيد النيتروجين المرصودة ما بين الغلاف الجوي وتلك التي تتمركز على الأرض، يصعب قياس مستويات تلوث الهواء بشكل دقيق لفهم تأثيرات تلوث الهواء في منطقتنا. تقلّ أو تنعدم عمليّات قياس تلوث الهواء الأرضي طويلة الأمد في الشرق الأوسط وشمال إفريقيا، ويشكّل هذا الغياب عائقاً رئيسياً أمام وضع خطط واستراتيجيات فعالة لتحسين جودة الهواء.

الدقة في البيانات العلمية هي إحدى أهم الأهداف في التعامل مع هذا الموضوع، لذا نحتاج الوصول الى بيانات موثوقة وطويلة الأمد من أجهزة رصد تلوث الهواء الأرضية في المنطقة. نريد هواء نظيف لجميع سكان المنطقة كحقٍ أساسي من حقوق الإنسان، ولا يمكننا تحقيق ذلك إلا عبر الوصول إلى البيانات كخطوة أولى!

رنا، السيلوي،. "اليوم العربي للبيئة. وأبرز المشكلات والتحديات البيئية التي يواجهها العالم العربي." طقس العرب (2021):
<https://www.arabiaweather.com/ar/content/>اليوم-العربي-للبيئة-وأبرز-المشكلات-والتحديات-البيئية-
التي-يواجهها-العالم-العربي.

في يوم 14 تشرين الأول/أكتوبر من العام 1986، اجتمع مجلس جامعة الدول العربية في العاصمة التونسية،
وأصدر قراره حينها بتأسيس مجلس الوزراء العرب المسؤولين عن شؤون البيئة .

ولأهمية هذا القرار الذي يجعل العالم العربي جنباً إلى جنب مع باقي الدول العالمية الأخرى، في مواجهة المشاكل البيئية
التي تهدد كوكبنا الأرض، تم اعتبار تاريخ 14 أكتوبر/ تشرين الأول، يوماً عربياً للبيئة.

ابراهيم، الشمري، احمد جاسم. "سياسة تركيا المائية وانعكاساتها على دول الجوار الإقليمي العربي (سورية-العراق)". مجلة
مركز بابل للدراسات الانسانية 10.70-31 (2020): 2 , no.

تعد قضية المياه، من اعقد القضايا والمشاكل التي واجهت العلاقات التركية - العربية، وعلى وجه الدقة العلاقة
مع العراق وسوريا، وهي كذلك من القضايا المشتركة بين هذه الدول، إلا أن جانب التعاون في هذه القضية كان ضعيفاً،
وموقف الضعف فيها يأتي من عدم اعتراف أي طرف من الاطراف بحقوق الاخر. اعتقدت تركيا منذ البداية بان المياه
البحرية في حوضي دجلة والفرات هي مياه تركية لأنها تنبع من الارض التركية، وعليه فإنها غير ملزمة قانوناً بإعطاء حصة
ثابتة للدول المتشاطئة معها في الوقت الذي تهتم فيه البلدان بتقدير حاجتهما لمياه دجلة والفرات، وانها غير ملتزمة بالقوانين
الدولية التي تنص على عدم الاضرار بالآخرين، ولذلك فإنها مستعدة للاتفاق مع العراق وسوريا لتزويدهم بالمياه شريطة أن
لا يتعارض ذلك ومصصلحة البلاد وفي اقامة المشاريع التنموية والاقتصادية، ولهذا نجد انها تعاملت في هذه القضية بطريقة
ملتوية. بالمقابل فان الاخيرين حاولوا الوقوف بوجه السياسة التركية وطالبا بحقوقهما القانونية لمياه دجلة والفرات، غير انهما
لم يتوصلا إلى حل مشترك يتفقا عليه لمواجهة سياسة تركيا المائية بل كان الخلاف بينهما هو الابرز في هذه القضية مما
جعل من تركيا أن تستغل هذا الخلاف لصالحها. وتأسيساً على ما تناولناه نجد أن المتضرر الاكبر من السياسة المائية لتركيا
هو العراق باعتباره الدولة الاخيرة المستفيدة من مياه النهرين، في الوقت الذي سعت تركيا لتوظيف المداخلات الاقتصادية
والسياسية التركية تجاه دول المنطقة بما يوفر لها وظيفة مهمة في سياسات رائدة في النظام الاقليمي في الشرق الأوسط،

من خلال اصرار تركيا على المضي قدماً في مشروع واسع النطاق في جنوب شرق الاناضول، بهدف تزويد المناطق الحدودية بالطاقة ومصادر الري لجعلها نقطة تجمع للحبوب والفواكه والخضراوات لدول الشرق الاوسط، واستمرار تمسكها بعدم اعتبار نهري دجلة والفرات نهريين دوليين، وانما نهريين عابرين للحدود ويقصد السماح لنفسها باستثمارهما وفقاً لمصلحتها ولبناء السدود وفقاً لتصوراتها وبما يسمح لها بتحويلهما (كورقة سياسية) مستقبلاً للتحكم في حياة سوريا والعراق المائية، وهي تستفيد من خلافات البلدين، بل تعمل على إدامتها بغية بناء مخططاتها المائية بعيداً عن الرؤية العربية الموحدة.

Water is an issue, of the most complex issues and problems faced by the relations Turkish-Arab, and the precise relationship with Iraq and Syria, which are also common issues between these countries, however, as well as cooperation in this case was weak, and the position of weakness which comes from the non-recognition of any party other rights, Turkey I thought from the beginning that the current in the Tigris and Euphrates water is a Turkish waters because they stem from Turkish soil, and therefore it is not legally bound to give a fixed quota for countries riparian with them at the time interested in estimating need two of the waters of the Tigris and the Euphrates, and it's It is committed to international laws which provide that no harm others, so it is ready to deal with Iraq and Syria to provide them with water provided it does not contradict the interests of the country and in the establishment of economic and development projects, and for this we find it handled this issue in a roundabout way, in contrast, the two tried to political particular stand Turkish and demanded their rights and legal waters of the Tigris and Euphrates, but they did not reach a common solution to agree upon the face of Turkey's water policy but was disagreement between the two is the most prominent in this case, making Turkey to exploit this difference to their advantage, and building on what we've had, we find that the biggest affected by politics water for Turkey is Iraq as the latest recipient State of the rivers, at a time when Turkey has sought to employ economic and political interventions of Turkey towards the countries of the region so as to provide them an important function in the pioneering policies in the regional order in the Middle East, through the insistence of Turkey to move forward on a broad project scale in Southeast Anatolia, in order to provide the border areas of energy and sources of irrigation to make it a gathering of grains, fruits and vegetables to countries of the Middle East point, continuing its commitment not to consider the Tigris and Euphrates rivers international, but Nhrien crossing the border and the purpose of allowing itself Bastosmaarhama according to their interest and to build dams, according to the perceptions and to allow them to Pthoelhma ((political card)) in the future to control the life of Syria and Iraq of water, which benefit from the differences

the two countries, but also works to sustain its plans to build the water away from the unified Arab vision.

أحمد, بومرعي،. "الكويت ترفع أسعار الكهرباء والماء 500% على الوافدين". العربية, 2017.

Kuwait increases the prices of electricity and water with 500 % for expatriates

فادي, جدعان،. "العدالة بين الأبعاد البيئية والاقتصادية. مقدمة سلسلة أوراق "منطقة في خطر!". منطقة في خطر! العدالة بين الأبعاد البيئية والاقتصادية (2021): <https://www.greenpeace.org/mena/ar/3>، البيئة-والعدالة-في-

العالم-العربي-/?utm_campaign=paem&utm_source=phase3-

launch&utm_medium=email&utm_content=act-section-intro&utm_term=paem-segment&global_project=ID031.

مصطفى, خالد محمد. "تغير المناخ وآثاره الاقتصادية والاجتماعية و البيئية علي السكان في العالم حالة السودان." مجلة دراسات الكوارث واللاجئين 1 (2012):

Global warming is speedily becoming one of the major environmental problems of our era. Besides its sweeping impacts on humanity, global warming making disastrous situation to the bio-diversity that includes wild life, forests, lands and other vulnerable resources that are rapidly suffering the effects of changing climate.

This paper is dealing with the topic "Climate change and its direct or indirect economic, social and environmental impacts related to global population, with special reference to Sudan".

Concern about global warming and climate change is not a new phenomenon. Almost a century ago, scientists began to voice fears that temperatures in our planet could begin an inexorable rise, as a result of fossil fuels being burned to supply energy, greenhouses gases resulted from human activities like carbon dioxide, methane and nitrous oxide.

Nowadays, the negative impacts of climate change increases, and the situation became disastrous, due to the rapid increasing in the industrial activities carried by

the rich advanced countries. Therefore, there is a pressing need for more efforts to be exerted in order to get rid of these (negative) impacts or to minimize them as possible for this and future generations.

For more than ten years, the risks posed by this climate change have received an increasing attention from the international scientific and political communities. Series of international conferences held throughout the past period synthesized the available science, mobilized further research, and provided increasingly specific warnings and recommendations for action.

Governments intervention is used to be one of the effective tools to reduce the gas emissions in each country as decided by “Kyuto” protocol.

Although developing counties have contributed little to the problem of global warming, yet they will be hit hard by its impacts.

While the industrialized world emits (75%) of all greenhouses gas emissions.

Subsequently, if countries around the world do not reduce emission of the harmful gases, the probable scenario by the end of the 21st century would be greater rise in temperature, high sea level, decrease in rainfall and reduction of food crops.

يزيد, د. تفرات, أ. كزير نسرين and, أ. كزير أمال. “الاقتصاد الدائري ودوره في تعزيز معايير الاستدامة كتواجد جديد في مجال التطور العمراني-مدينة مصدر نموذج.” مجلة الحدث للدراسات المالية والاقتصادية 01 (2018):

تعالج هذه الورقة البحثية موضوعا على قدر كبير من الأهمية والمتمثل في تطبيق مفهوم الاقتصاد الدائري والذي يبدو مفهوما حديث النشأة عالميا إلا أن هذا المصطلح ظهر في السبعينيات الميلادية وذلك للاستفادة بالشكل الأمثل وقدر الإمكان من الموارد المتاحة والعمل على استدامتها من خلال إنشاء ما يسمى بالمدن الذكية والمستدامة كتوجه جديد في مجال التطوير العمراني بغرض تعزيز معايير الاستدامة الاقتصادية والاجتماعية على غرار “مشروع مدينة مصدر” المستدامة. وقد توصلت الدراسة ان مدينة مصدر تعد أول مدينة تصنع معايير الاستدامة في الخليج العربي، توفر لقاطنيها وروادها أرقى مستويات الحياة بأقل حد ممكن من الأضرار البيئية، تعمل على الارتقاء بمعايير الحياة اليومية والتنمية المستدامة إلى آفاق جديدة، وتحاول المدينة تقليل كمية النفايات إلى الصفر من خلال إعادة تدويرها أو إعادة استخدامها في أغراض أخرى.

This research paper addresses the very important issue of the application of the concept of a circular economy, which seems to be a globally emerging concept, but this term emerged in the Gregorian 1970s, so as to optimize and maximize the resources available and work to sustain it, Through the creation of so-called smart

and sustainable cities as a new orientation in urban development to promote standards of economic and environmental sustainability and social, like the “Sustainable Masdar City “ project, the study found that a city of origin is the first city to make the criteria for sustainability in the Gulf Of the Arab world, providing its inhabitants and pioneers with the highest standards of life with minimal environmental damage, is working to improve the standard of daily life sustainable development is new, and the city is trying to reduce the amount of waste to zero through recycling or reuse for other purposes.

سلامة, رمزي على إبراهيم. مشكلة المياه في الوطن العربي: احتمالات الصراع والتسوية. المحرر الأدبي للنشر والتوزيع والترجمة, 2001.

حمزة, ودغيري., “توربينات الطاقة الريحية بالمغرب وآثارها على البيئة والإنسان والتنمية.” (2021):
https://ar.climatetracker.org/articles/twrbynt-ltq-lryhy-blmgrb-wathrh-aal-lbyy-wlnsn-wltnmy?fbclid=IwAR19nFWcWjxW-c6nlabiXjWacI5_s5TAcR91Kf36dXBW059pe7IiO8p5L8.