MISSION STATEMENT

Al-Noor, The Boston College Undergraduate Middle Eastern and Islamic Studies Journal, aims to:  ❖ Facilitate a nonpartisan, unbiased conversation within the Boston College community and beyond about the Middle East. ❖ Provide a medium for students to publish research on the Middle East and Islam. ❖ Promote diverse opinions and present a comprehensive view of the myriad of cultures, histories, and perspectives that comprise the Middle East. ❖ Be considerate of the complexity of the region while pursuing the utmost objectivity.
This year, through a multi-year grant from the Institute for the Liberal Arts, a small group of Boston College students and faculty members have been working on a project to educate the BC community about Afghanistan. In Aid Through Action: Reconstructing Education and Health Systems in Afghanistan, we are honored to share with our readers the perspective of one of our distinguished speakers in the lecture series that accompanies the project, Dr. Sakena Yacoobi. Dr. Yacoobi is the founder of the Afghan Institute of Learning and was recently awarded the 2013 Opus Prize. Given annually, this $1 million faith-based humanitarian award recognizes unsung heroes of any faith tradition, anywhere in the world, solving today’s most persistent social problems.

In Rentier State Theory and Human Agency: The Case of Saudi Arabia, Ryan Folio takes an innovative approach to rentier theory by arguing that it should leave more room for human agency. He contends that human agency can account for the causal mechanisms by which the outcomes predicted by rentier theory occur and can help to explain departures from the rentier state paradigm.

In Finding Hope in Palestine: A Photo Essay, Annelise Hagar shares her impressions of her recent trip to Israel and Palestine, capturing the spirit of the people she met there.

In Oil and Arab Democracy: A Consistent Indicator of an Endemic Void, Christopher Grimaldi argues that oil allocation states can more easily avoid democratization than oil production states. He cites the examples of emir-governed Qatar and Hosni Mubarak’s Egypt to support his argument. He also addresses Late Rentier Theory, offering his perspective on the relationship of oil wealth to recent political upheavals in the Middle East and North Africa.

In The Empty Well: Yemen’s Groundwater Crisis, Daniel Mescher describes Yemen’s severe water crisis, noting the potential that the country will run out of water by 2017. He argues that Yemen is on the verge of environmental catastrophe, and proposes a variety of solutions ranging from more effective water market regulation to the construction of desalination and pumping plants to the increased importation of food.

On a personal note, we will both be graduating from Boston College after four years with the publication and two years as Editors-in-Chief. We are grateful for the opportunity to have worked with and learned from so many wonderful students, researchers, faculty members, and distinguished speakers over the past four years, and we would like to thank them for their support and inspiration. Most of all, we would like to thank our faithful readers, who have made it such a joy to publish this journal twice a year.

On behalf of the entire staff of Al-Noor, we would like to thank you for your continued readership. As always, comments, questions, or suggestions are welcome at eic@alnoonjournal.org.

Brooke Loughrin '14
Nicholas Moffa '14
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From an early age, Dr. Sakena Yacoobi’s father encouraged her to receive the best education possible. By the age of six, she had read all of the books at her local mosque, and she soon entered primary school. While many of her relatives suggested that she marry and stay in the home, she completed high school and applied to university. Anticipating the USSR’s impending invasion of Afghanistan, her father urged her to attend school in the United States. After earning her undergraduate degree at the University of the Pacific in Stockton, California, she continued her education with a Master’s degree in public health at Loma Linda University. After graduating, Dr. Yacoobi worked as a professor at the University of Detroit before beginning work with the International Rescue Committee (IRC) in Pakistan in 1990. In her role with the IRC, Dr. Yacoobi conducted surveys and research

Aid Through Action:
Reconstructing Education and Health Systems in Afghanistan
in Afghan refugee camps, where she witnessed a deficiency of opportunities for youth. Realizing the profound difference education had made in her life, Dr. Yacoobi decided to provide this service for Afghan children. She began by working with one local mullah to implement a curriculum for 300 girls in one camp. In this process, she handwrote eight teacher’s manuals and oversaw the management of the entire program. With the success of this basic school, the IRC offered additional support, and within one year Dr. Yacoobi was able to open 15 schools that supported 27,000 students in refugee camps in Pakistan. She directly supervised each school, trained teachers, and created a curriculum that emphasized health and peace.

With the rise of the Taliban in Afghanistan, Dr. Yacoobi became increasingly worried about the severe restrictions on education, especially for women and young girls, put in place by the new leaders. For this reason, she returned to her home in 1995 to found the Afghan Institute of Learning (AIL) with $20,000 of her own money. From this point forward, Dr. Yacoobi dedicated her life to improving the health care and education systems in Afghanistan and providing these services to all Afghans who seek them. Originally, AIL started as an underground system of home schools for young girls who could not freely receive an education after the Taliban came to power. Right before the U.S.-led intervention against the Taliban, Dr. Yacoobi maintained 80 schools, which taught over 3,000 students.

With the fall of the Taliban, the Afghan Institute of Learning was able to make its efforts public and has since expanded to serve almost 300,000 students in 11 provinces of Afghanistan since its founding. AIL has also expanded its reach in students in refugee camps in Pakistan. She directly supervised each school, trained teachers, and created a curriculum that emphasized health and peace. AIL has also expanded its reach in students in refugee camps in Pakistan. She directly supervised each school, trained teachers, and created a curriculum that emphasized health and peace.

Today, AIL is the biggest non-governmental agency in Afghanistan and is officially registered with the Ministries of Health, Education, Women’s Affairs, and Social Affairs. For her work, Dr. Yacoobi has received the Opus Prize, a premier humanitarian award and $1 million prize given to further her work. In 2005, she was nominated for the Nobel Peace Prize. In 2011, Afghan President Hamid Karzai presented Dr. Yacoobi with the National Peace Award. For all of her accolades, Dr. Yacoobi remains humble and attributes her success to the dedication of her team and the blessing of her own education, saying, “For me, this is [the] power of education. Education changed my life, and I feel that education is changing everybody’s life.”

What was it like growing up in Afghanistan?

Dr. Yacoobi: When I was growing up, Afghanistan was a beautiful country. When I was a child I could go in the street, play with my cousins, walk to school, and visit relatives without fear. Unlike Afghan children today, I never worried that I would be kidnapped or that a bomb was going to explode. I was never afraid that someone was going to be killed in front of me.

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The Afghanistan of today is not the same as the Afghanistan of my childhood. In order to learn, children need to wake up in their homes, surrounded by their happy family. They need to feel safe. Instead of living the carefree life that a child should live, Afghan children go to school worried that their school will be raided or bombed. They stop class to ask their teacher if they can call home to check that their parents are safe. This is not the peaceful Afghanistan that I grew up knowing, but I am confident that if we keep working towards education and peace, we will get back to the country that I knew.

What can you tell us about your education? How important was it to you?

Dr. Yacoobi: I was the luckiest person; my father decided that no matter if his first-born child was a boy or a girl, he or she would be educated. He was not an educated man, but he ran a successful business and was determined that his children would be educated. At the age of four, he enrolled me in a school at a mosque and, by the time I was six, I had completed all of the religious books that the mullah had to teach me. When I started at the school, I had already completed two grades by studying at the mosque. I have such good memories of school! While some students were punished for being lazy or not studying very hard, I did well. School was important to me. I wanted to do well, and my father supported me.

As I completed high school, I saw that my education allowed me to help my father with his business. I could also see that I would be able to help women and children if I continued with my education and became a doctor. Around me, women were dying during childbirth, and children were dying young. I wanted to become a gynecologist so that I could help these women and children. I came to the United States to continue my education, and it changed my life. Education gave me a power that I would not have been able to get any other way. Every day I was learning, and I wanted to learn more. I could see that education had changed everything for me, so for me, education became the key issue. I realized that every woman and child should be able to be educated. If we are talking about how to empower people, education is how you do it. If we want to build a nation, we need to educate the people.

What inspires your work to improve the conditions of women and children in Afghanistan?

Dr. Yacoobi: I am inspired by the energy that I see coming out of the women in Afghanistan as they
work to improve their lives. I see them overcoming poverty, violence, and gender inequality. They really inspire me, and I want to help them find solutions to improve their lives. The Afghan Institute of Learning, the organization that I founded, is trying to change their lives in a sustainable way so that they can be independent. First, a woman needs to be educated, she needs to learn critical thinking skills, and she needs to learn about her rights as a human being. But before a woman can be free of violence, she must be economically empowered. We are working to find ways to help women learn what they need to become empowered economically, so that they will not be dependent on someone else.

How is women’s education different now compared to before the Soviet invasion? Have any areas seen progress compared to the pre-Soviet years?

Dr. Yacoobi: Before the Soviet Union invaded, women were becoming educated, particularly in urban areas. They had opportunities to go to the universities, and many urban women did get a higher education. They became teachers, lawyers, doctors, parliament members, and more. There were still places where there were no schools, particularly in rural areas, making it difficult for women to get an education, but generally education for women was expanding.

After the Soviet invasion, education for women continued in large urban areas, but it became increasingly difficult for women in rural areas to be educated. When the Taliban came to power, education for girls and women was banned. Women could not go to school, they could not work, it was difficult to go outside, and they had no way to share ideas with others. There were secret, underground schools for some girls. For example, AIL supported 80 schools for 3000 girls. But, instead of millions attending school, just a few thousand were learning in small rooms from dedicated teachers.

In the last ten years, education for girls and women has taken a huge leap forward. Millions of women and girls are once again attending school. If the women are too old for school, then they are in learning centers like the centers that AIL supports. Some are going on to universities, and, once again in Afghanistan, women are becoming lawyers, engineers, teachers, governors, and maybe one day, president. We still have a long way to go. There are still places without schools and provinces where the majority are uneducated, but when you compare today to ten years ago, you can see that things have improved greatly.

When you founded AIL in 1995, what was the political and social climate like in Afghanistan?

Dr. Yacoobi: When I founded AIL, the Taliban were just beginning to come to power. In the areas where they came to power, women were suffering. I founded AIL because I saw the difference education had made in my life, and I wanted to help others gain an education. I saw that women were miserable. They did not think they were capable of speaking or learning, and they felt devastated and hopeless. We started our education programs to teach people how to think critically and solve their own problems. We taught them about their religion, their culture, and their traditions, and we helped them to think about what they wanted for their lives, not what others were telling them they should want. When we began, some people were trying to use religion to scare people and gain power. Those trying to gain power were telling people “if you do this or that, you won’t be a good Muslim.” We taught people critical thinking skills so that they would question statements like these and decide for themselves how they wanted to think and how they wanted to live. Once the people began to be educated, they could see that education was not preventing them from being a good Muslim, and they spread this message to others.

What types of programs do you currently provide? Are you interested in expanding on these services?

Dr. Yacoobi: AIL presently has offices in Kabul and Herat, Afghanistan and in Peshawar, Pakistan. AIL serves more than 400,000 women, men, and children annually, is run by women, and employs about 430 Afghans, over 70 percent of whom are women. AIL offers pre-school through post-secondary education, training opportunities for teachers in interactive, critical thinking methodologies; training to members of civil society in subjects such as human rights, women’s rights, leadership, and peace; and health education and health care through its clinics and Community Health Workers.

Since AIL works with communities, AIL waits for communities to be ready for expansion. Sometimes this means waiting for a community to request services. For example, the community might ask AIL to establish a Learning Center in their village. Sometimes AIL will see a need within the community and will reach out to the community and with the community will develop programs based on that need.

For example, since late 2013, AIL has been hosting conferences to inform people about the upcoming election. Initially, AIL was requested to hold election workshops by the communities that it worked with. As AIL saw that many people did not understand how an election would impact their lives and that there were many misconceptions about the voting and how government officials are chosen, AIL announced that it was holding election workshops and many people have attended. AIL’s conferences strive to explain the rights, privileges, and responsibilities that come with living in a democracy, and many of the participants in the conferences leave excited about the idea of voting in April’s election; they then share this information with their friends and family.

In 2014, AIL has also begun hosting Women’s Networking Conferences which aim to help women make connections with other women and share information. Over the years, AIL’s Learning Centers have become places where women can network with
Dr. Yacoobi: I believe in the people of Afghanistan. In the years since the fall of the Taliban, I can see that the lives of people are changing for the better. They are beginning to see that they can change their lives for the better. Afghanistan has a wonderful future ahead. The only thing stopping us is the lack of security. I really hope and believe that security will be improved by educating the people and showing them that violence is not the only answer to their problems. The more educated the people become, the more they are seeing that war is not the only way of life. AIL is teaching people about Islam, and that it is a religion of peace, not violence. Islam is a strong religion, rooted in peace, and by educating the people so that they can learn the meaning of Islam for themselves, they are realizing that Islam encourages peace, not violence.

Why are your education programs so successful with the youth of Afghanistan?

Dr. Yacoobi: AIL is using a model of education that is completely new for Afghans. Instead of relying on rote memorization, as education in Afghanistan did for many years, AIL uses interactive teaching methodologies that teach students critical thinking skills. Youth are learning to think for themselves instead of just memorizing what others tell them. AIL promotes teamwork and working together and encourages students to find ways to help their families and community. Since AIL believes that young people can make a difference, the young people themselves believe that they can make a difference and rebuild and bring peace to Afghanistan.

How do you combat the rise of ethnic tensions through your education programs?

Dr. Yacoobi: We combat ethnic tensions by teaching that we are all human beings, no matter the color, tribe, or ethnicity. Everyone is to be respected. Everyone is equal. There are passages in the Qur’an that talk about this, and we use these passages to teach that we are all equal, and using these passages helps us get through to people and change their minds. In addition, we model this behavior. It is a slow process, but we are getting there. Today, if you ask people in Afghanistan where they are from, they will say Afghanistan. In the past, they might have answered with their village, tribe, or ethnic group, but more and more people will say they are Afghans. There are still areas where people will tell you they are from a particular village or tribe, but we keep working towards the idea that we are all human beings; we are all Afghans.

What attitudes toward women and girls do you see forming among young men in Afghanistan?

Dr. Yacoobi: AIL is working with both men and women on the issue of gender equality. We can see that the minds of young men are changing quickly. We see how these young men will encourage their mothers, wives and sisters to go and become educated, or to learn a skill and earn an income outside the home. We work with thousands of young men, and we can see that they are treating the women in their lives different than they did in the past. We are working in a culture that has not had equality for thousands of years, so change in this area takes time. But AIL believes that this work is important, and we are seeing a change among the younger generation, which gives us hope and encourages us to continue educating young men about the benefits of gender equality.

How do you see your work and the work of AIL changing in the future?

Dr. Yacoobi: In the future, I hope that AIL will be able to establish more programs, which will provide higher education for Afghans in areas such as IT and health. I also hope that we will be able to use more technology to assist in our teaching and outreach. I hope that we will be able to have a presence in every province of Afghanistan, rather than the 11 where we have worked. I hope that our education programs will continue to expand and be available to more people. I would like to be able to expand our job training and offer more vocational training, which will allow both men and women to improve their economic situation.
The rise of oil production in the Persian Gulf countries from the mid-twentieth century onwards witnessed such drastic political, economic, and institutional changes that Hazem Beblawi called the region a “rentier universe.”1 These transformations coincided with debates among political scientists concerning the study of political processes. Whereas political scientists in the post-World War II period had largely abandoned analysis of the state for a focus on “political systems,”2 by the 1970s a number of scholars initiated a push to “bring the state back in.”3 The body of literature commonly referred to as “rentier theory” developed against this backdrop, and thus, although Beblawi recognized in his seminal piece that rentierism would have implications for both “the state and the citizen,” the former played a much larger role in his and subsequent analyses.
This paper argues that rentier theory should leave more room for human agency, understood as the ability of individuals to affect the political and institutional formation of the states in which they are citizens. The argument begins by briefly restating the relevant predictions of rentier theory. It proceeds with a critique of rentier theory in the case of Saudi Arabia. The case study demonstrates that human agency can supplement academic analyses of state rentierism in two key respects. First, human agency can sometimes account for the causal mechanisms through which the outcomes predicted by rentier theory occur. Second, human agency sometimes underlies departures from the rentier state paradigm. Although these points are by no means an exhaustive list of human agency’s potential value for understanding rentier states, they contribute to the goal of recasting rentier theory as what Steffen Hertog has called “a genuine social scientific research program.” The paper concludes by introducing a number of caveats regarding the overall significance of human agency in rentier environments.

A state qualifies as rentier if a substantial portion of its economic wealth is accrued from the sale of its natural resource wealth abroad. This paper takes a rent to be any income earned solely on the basis of largesse, clientelism, and privileges. Second, popular legitimacy and stability are bought and sold through a system of autonomous representation. Instead, regime legitimacy is autonomous from society and obviates the need for significant control over writing the social contract of the Kingdom since the time of Ibn Saud. For example, in the 1950s and early 1960s, King Saud, Prince Talal, and Crown Prince and King Faisal all vied for different state-society arrangements. Saud wanted to maintain a combination of modern institutions and tribal practices, Talal advocated for a constitutional monarchy, and Faisal pushed a “technologically developed but conservative order.” That Faisal’s order eventually won out is of tremendous import for state autonomy and political representation. His tax-free system, inclusive of free health services and education as well as heavily subsidized food, electricity, and water, formed the basis for the modern Saudi welfare state.

Elite agency is also critical to understanding relational fragmentation and the lack of popular political organization in Saudi society. The construction of institutions and modern bureaucracies was not a haphazard endeavor but conservative order. Elite agency is also critical to understanding rent-seeking behavior. The case study demonstrates that human agency can supplement academic analyses of state rentierism in two key respects. First, human agency can sometimes account for the causal mechanisms through which the outcomes predicted by rentier theory occur. Second, human agency sometimes underlies departures from the rentier state paradigm. Although these points are by no means an exhaustive list of human agency’s potential value for understanding rentier states, they contribute to the goal of recasting rentier theory as what Steffen Hertog has called “a genuine social scientific research program.”

The analysis that follows demonstrates that these shortcomings are best reconciled not by “expanding” rentier theory to account for human agency, but by refocusing the theory on individuals. Individuals are more “plausible ontologies” than states or societies broadly defined, and their decisions reveal a causal chain that can sometimes explain the differences between rentier environments, such as Saudi Arabia. This approach has implications for Saudi Arabia as well as for other rentier states. First, human agency shows that complex political processes often depend on highly variable historical contingencies. Second, the Saudi case demonstrates that “wider social differences reproduce themselves within the processes of the state,” a critical step to debunking rentier theory’s implicit assumption of the state’s autonomy from society.

In the Saudi case, the state is empowered vis-à-vis society, and formal political representation is all but absent. This was not, however, an outcome that was pre-determined by the inflow of oil revenues. The Saudi monarchy as a ruling institution, a royal family, and a Wahhabi vanguard, has maintained significant control over writing the social contract of the Kingdom since the time of Ibn Saud. For example, in the 1950s and early 1960s, King Saud, Prince Talal, and Crown Prince and King Faisal all vied for different state-society arrangements. Saud wanted to maintain a combination of modern institutions and tribal practices, Talal advocated for a constitutional monarchy, and Faisal pushed a “technologically developed but conservative order.” That Faisal’s order eventually won out is of tremendous import for state autonomy and political representation. His tax-free system, inclusive of free health services and education as well as heavily subsidized food, electricity, and water, formed the basis for the modern Saudi welfare state.

Rent-seeking in Saudi society offers a final example of human agency’s ability to contribute to causal chains of rentier theoretical outcomes. For scholars of rentier states, rent-seeking is variously treated as a question of ethics or mentality as a macro-level process. A better description of this activity takes into consideration the effect that the relative disparity of state resources and state capacities has on encouraging “brokerage” at all levels of political and economic life. Brokers in Saudi society perform a social and political function. So-called “gatekeepers” manage access to state figures while paper pushers smooth citizens’ interactions with state bureaucracies. Brokers have, at times, affected policies in the Saudi case. Hertog states, “Contractors and commercial agents in the Gulf have repeatedly managed to stymie official...
rentier theory has not tried to account for these dynamics arising from individual choices. The persistence of opposition to the Saudi regime presents a second exception for discussion. Under the classic rentier state paradigm, the state can distribute oil wealth to buy off political and religious opposition and achieve compliance and legitimacy. This is frequently not true in practice, as the state can paradoxically engender opposition through the distribution of rent. For example, the al-Saud’s decision to staff the expanding state bureaucracy with Najdis catalyzed the creation of a new business-class held together by social and familial networks. During the regime’s subsequent efforts to restructure the economy, the bureaucracy and individual business leaders joined together to fight the al-Saud and preserve an environment conducive to the continual generation of profit. Furthermore, the al-Saud’s cooption of the ulama was at least partially responsible for Juhaiman al-Utaibi’s notorious uprising against its rule in 1979. This example is consistent with Hootan Shambayati’s analysis of Iranian rentierism. Although religion remains a major legitimating force for the Saudi regime, it is a legitimizing ideology for groups opposing the rentier state as well. Tilly argues that test of a good theory is to account systematically and parsimoniously for the variations of common political processes in different environments. Rentier theory falls short of explaining political and institutional developments in Saudi Arabia in several key respects, some of which have been explored above. In these cases, human agency can lend explanatory power and causal significance to academic analysis. Further, variations in institutional efficiency and the inability of the state to buy off opposition is crippling for rentier theory’s deterministic account of political and institutional development. These processes must be considered at particular intervals in history and with a nuanced understanding of the interactions of states and societies.

This paper has established that rentier theory would be well served to leave more room for human agency. We have seen that human agency is critical in two main respects. First, when rentier theory predicts outcomes that actually occur, human agency can be central to the causal mechanisms at play. Second, human agency is sometimes responsible for deviations from rentier theoretical predictions. Both of these considerations provide support for a critical reevaluation of the rentier state paradigm, equipping it to focus on more plausible ontologies and to use causal chains to explain variations in particular cases. This yields the conclusion that the importance of human agency to political and institutional development may

brokerage at reducing their national privileges.24 Brokers are integral to a discussion of political and institutional formation in the rentier context due to their informal but indispensable function of helping citizens to access state resources.

Lisa Anderson warns that the absence of financial constraints on the state in rentier societies “may obscure the existence of other constraints—in bureaucratic organization, coercive ability, even legitimacy—which are as important.”26 The discussion of causal mechanisms above gives an idea of the types of constraints that have been obscured by rentier theory determinism. Faisal’s decision to build a robust welfare state set off a kind of path dependency whereby pivots in political and institutional development became more difficult over time.28 This yields the early conclusion that the importance of human agency in the Saudi case is contingent on history. Further, as Timothy Mitchell argues with reference to Aramco, the boundary of the state “never marks a real exterior.”29 The social dynamics of the royal family were amplified through the creation of state institutions, and brokers at all levels of society blur the rentier theoretic boundary between state and society. This insight complicates scholarly discussions of state autonomy. Similar constraints arise through an examination of the role that human agency can play in explaining deviations from rentier theory. Contrary to the rentier theoretic prediction that oil incomes encourage the development of “flabby” bureaucracies, Saudi Arabia boasts a number of “islands of efficiency,” among them the judiciary, the Saudi Basic Industries Corporation (SABIC), and Saudi Aramco.28 Kings Faysal and Fahd were able to insulate these institutions from pervasive inefficiency and corruption by introducing highly educated technocrats and holding them accountable to the royal family directly.27 This strategy relies in large part on the hub-and-spoke system elaborated earlier; although rentier theory rightly predicts that cooperation between institutions was difficult during this period, royals were empowered on the macro-level to substantially affect institutional development and capacity. Hertog states, “If anything, large increments of oil income have increased the menu of institutional options available to the elite, resulting in a state apparatus with highly varied components.”30 The opposite is true on the micro-level, where low-level bureaucrats frequently subvert rules and policies in accordance with their own social interests. As a model that is both invariant and general,
be historically contingent, an insight that is surely applicable in other cases.

Further study may assess the importance of agency not based on historical timing, but on the identity of actors. This work in particular has demonstrated that elite agency is extremely influential in rentier environments, but the extent to which ordinary citizens of rentier states can affect political outcomes is largely unexplored. An expanding literature on the importance of groups may fill this gap, as scholars continue to debate the importance of collectives like the private sector and the ulama.46

ENDNOTES


3 Peter B. Evans, Dietrich Rueschemeyer, and Theda Skocpol, Bringing the State Back In (Cambridge: Cambridge University Press, 1985).


5 Beblawi, p. 87.

6 Hertog, Princes, Brokers, and Bureaucrats, p. 265.


8 Ibid.


10 Hertog, Princes, Brokers, and Bureaucrats, p. 3.


14 Mitchell, p. 90.


16 Ibid, p. 136.


18 Hertog, Princes, Brokers, and Bureaucrats, p. 17.

19 Ibid, p. 16.


21 Beblawi, p. 88.


26 Hertog, “Princes, Brokers, and Bureaucrats,” p. 132. See also, Hertog, “Shaping the Saudi State,” p. 556.

27 Mitchell, p. 90.

28 Hertog, “Princes, Brokers, and Bureaucrats,” p. 28.

29 Ibid, pp. 98-100.

30 Ibid, p. 3.

31 Ibid, p. 11.

32 Tilly, p. 1597.


34 Okruhlik, p. 298.


38 Tilly, p. 1601.


40 Hertog, Princes, Brokers, and Bureaucrats, p. 15.
Finding Hope in Palestine:
A PHOTO ESSAY

By Annelise Hagar

These images are the best way I know to communicate what I saw and felt while in Israel and Palestine. I saw borders and walls but also non-violent resistance and resilience.
Oil and Arab Democracy: A Consistant Indicator of an Endemic Void

Christopher Grimaldi

Christopher Grimaldi is a junior in Boston College's Political Science Honors Program. Currently a member of the Alpha Sigma Nu Jesuit Honor Society and Junior Fellow at the Clough Center for the Study of Constitutional Democracy, he plans to attend law school after completing his undergraduate studies.

For the better part of a century, the world’s top fifteen oil exporters have included six states in the Middle East that identify themselves as Arab. However, neither the governments nor the citizens of these Arab oil-producing Arab nations have translated their natural resource wealth into democratic political freedoms. Rather, authoritarian regimes have remained fixtures in these countries for decades. Many Western scholars have assumed that this consistently negative relationship between oil and democracy automatically marks the so-called resource curse, which concludes that “oil and democracy do not mix.” This question becomes far more relevant in the wake of the Arab Spring, as theorists argue whether oil’s presence or lack thereof bears any connection to democratic revolution.
While the presence of oil does not automatically negate the possibility of democratization, its absence does not guarantee a democratic political system. Michael Ross’s Rentier Effect Theory examines how oil enables the state to separate itself from society in an oil-producing country. Oil revenues reduce the need for a regime to tax its citizens, eliminating its responsibility to provide political representation, while encouraging patronage spending to dampen democratic fervor and preventing the collectivization of economically independent citizens who could push for change. Giacomo Luciani argues that oil’s correlation to the likelihood of democratization depends on whether a country is an allocation state (oil exports are enough to drive total revenue) or a production state (oil production does not provide enough revenue to support the domestic economy). The level of oil revenues determines the degree of separation between state and society. Yet Luciani’s argument must contend with the theory of Late Rentierism, which cities states are better equipped to avoid democracy than production states because of how much oil revenue contributes to their respective economies. To support this argument, I will discuss Luciani’s Allocation-Production State Theory and its explanation of oil’s relationship to democracy. Next, I will use emir-governed Qatar (an allocation state) and Hosni Mubarak’s Egypt (a production state) on the precipice of the Arab Spring as cases to support the paper’s overarching claim. Connecting back to Luciani’s theory, I will explain why, because of their ability to use oil money, authoritarian oil producers experienced different outcomes amidst a push for democracy. I will not discount Late Rentier Theory, but rather explain how oil-driven economic reform solidifies current regimes and thwarts democracy. Finally, I will conclude by offering a broadened perspective on oil wealth’s relationship to recent democratic upheavals in the Middle East.

### Competing Theories and Arguments: Rentier, Late-Rentier, or Both?

The Allocation-Production State Theory is the most dynamic of the arguments offered for explaining the Arab oil resource curse. While the Rentier Effect Theory describes the anti-democratic practices encouraged by oil wealth, this argument provides them with causation. The more oil revenue a regime can produce for itself, the worse the anti-democratic effects. With oil production held constant, petrol states are categorized based on how much of their annual GDP is comprised of revenue from oil. Any number at or above 40 percent of annual GDP qualifies as an allocation state, and anything below is considered a production state. To what extent democratization can be avoided depends upon which of these two brackets an authoritarian state falls.

In allocation states, the greatest deterrent to democracy is the state’s independence from allocation. Allocation-Production State Theory directly addresses the issue of “no representation without taxation.” When a country has oil to export and earns enough revenue from outside sources, it is “freed from its domestic economic base.” Oil revenue also eliminates the government’s need to encourage development in or seek alliances with the private sector. Without a need for tax revenue from individuals or payoffs from businesses, the government is less concerned about productivity. Allocation states’ patronage systems use vast oil supplies and abundant external revenues to perpetuate public apathy toward democratic change. Democracy is “not a problem for allocation states” because of profound “indifference by the public concerning their political liberty.” Those citizens not directly incorporated into the oil industry—usually many in number, due to oil production’s non-labor-intensive nature—would pose a formidable threat to the regime if they mobilized. Yet allocation regimes have the funds necessary to pay off citizens and keep them content. This practice has enjoyed a long legacy, stemming from the Kuwaiti Model’s practice of reverse taxation and continuing on to Saudi King Abdullah’s $129 billion spending spree to keep the Arab Spring from spilling onto his borders. In other cases, allocation states can lash out against joblessness and limited work opportunities by offering guaranteed employment within the government. The “bloated bureaucracy” results that form “large, centralized, and repressive states,” entrenches the current regime and creates an environment inhospitable to democracy.

Without the luxury of prolific oil production, production states yield enough oil to maintain themselves and engage in minimal exportation. The fact that “the largest part of the population derives its income from sources different from the state itself” presents a problem for an authoritarian regime. First, this scenario demands economic diversification and innovation to avoid protest against joblessness. A production regime depends upon tax collection to run the state and maintain legitimacy, but at the cost of forming public expectations for representation. Production states inevitably lay a foundation from which a democratic movement can take shape.

Allocation-Production State Theory is contingent upon key demographic variables. An oil-producing country’s population size determines how much distributive flexibility a regime can enjoy and therefore how vulnerable it is to democratization. For example, consider two countries with similar oil outputs but different population sizes. The country with a smaller population will face less of a burden to provide oil for its own constituency and possess more from which it can export, while using the revenues for patronage and other means to gain independence from society. On the other hand, the more populous state’s regime will reap fewer benefits from the same supply, be burdened by greater domestic resource demands, take in less revenue, and face far more people who expect
Matthew Gray argues against Allocation-Production State Theory. Gray’s Late Rentierism breathes new life into modernization theory’s assumption that oil wealth would catalyze democratization, creating “new educated middle classes that would demand political freedoms and democracy.” While Late Rentierism acknowledges the quelling effect on democratization in years past, the theory contends that notorious rentier states, particularly in the Arab Gulf, are developing “a maturing of the state and its view of rents.” Oil-rich authoritarian regimes are responding to “new pressures for political reform and liberalization” in the Arab Spring’s wake by investing their wealth into economic diversification, more open political spheres, and a “relevant consensus around reform.” Instead of allocating rents, these regimes are investing in private sector development under a “more active and entrepreneurial state capitalism.”

Yet proponents of Late Rentier Theory are naïve in believing that these reforms have any intentions other than solidifying the current authoritarian regimes. Arab allocation state regimes “adopt the language of political reform...or embrace limited economic and social reforms to pursue modernization without democratization.” A controlling regime will put the brakes on gradual diversification and innovation in the private sector before the educated, pro-democratic middle class arises, as modernization theory predicts.

While Allocation-Production State Theory provides a more realistic evaluation of oil states’ deflection of democracy, it can benefit from coupling with Allocation-Production State Theory the wherewithal to see past them. The cases that follow support this combination of both theories’ respective strengths and demonstrate that economic initiatives in allocation states actually mask the perpetuation of anti-democratic practices. Whereas Late Rentier Theory and Allocation-Production State Theory would describe Egypt as vulnerable to democracy, they would disagree over Qatar. The former theory would equate modernization to political liberalization and predict Qatari democracy, while the latter would observe protection of authoritarianism.

**Qatar: An Allocation State’s Shrewd Protection of Authoritarianism**

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With hydrocarbon revenue accounting for 40 percent of its annual GDP and a population of just over two million, Qatar matches the description of a typical allocation state from economic and demographic standpoints. Of the 850,000 barrels of crude oil it produces per day, only 183,000 are directed toward domestic consumption—a number that has actually tripled over the past 13 years because of its rapidly growing economy. Thanks to natural resource surpluses, Qatar does not subject its citizens to income or domestic corporate taxes. The country’s history of monarchical governance under an emir has institutionalized authoritarian rule. Limited democratic elections of representatives to the Central Municipal Council (deputies of Qatar’s localities) began in 1999, and have only taken place four times since then.

Qatar seems to have bloomed into a Late-Rentier state. Yet the regime has leveraged its resource-driven wealth into successful economic reform and even pro-democracy rhetoric. For example, the Qatar government began a moratorium on new hydrocarbon projects that will last until 2015, with the objective of investing in the country’s private sector. Qatar has also portrayed itself as an advocate for democracy in the region. It took a leading role in funding the Arab Spring revolutions of 2011, as the Al-Thani regime voiced support on behalf of pro-democracy forces rebelling against autocrats similar to himself. Qatari support for the upheaval materialized as monetary support and media coverage from Al-Jazeera. As Justin Gengler explains, Qatar used “the imetus of the Arab Spring to put its trademark international activism into overdrive,” sending $500 million in relief money to Egypt during its revolution, while trying to serve as a mediating figure in Syria.

The Qatari government has given the impression that it is open to popular government within its own borders as well. For example, Emir Tamim bin Hamad Al-Thani has emphasized the development of Vision 2030, a strategy that seeks to promote “justice, benevolence, and equality” throughout the country. The plan also seeks to further develop public institutions. Beyond showing concern for improved human rights conditions, the Al-Thani regime took a step toward expanding popular representation when it announced that it would be holding its first-ever parliamentary elections of the Shura Council in June 2013. Based on these initiatives, Qatar is fulfilling Late Rentier Theory’s prophecy, as it seems to be transforming from an oil-driven state devoid of government accountability to the Arab success story of which Diamond and others have been waiting.

In reality, the bulk of Qatar’s pro-free market, pro-democracy rhetoric has not been realized within its own borders. In observing Qatari society as it is instead of as it could be, it becomes clear that the state’s liberalizing measures are merely part of managed reform meant to entrench a vulnerable regime.
Anti-democratic practices are swept beneath the surface by rhetoric, throwing oil money at the economy, and keeping unsavory headlines away from its state-run news networks.

Qatar’s limited political freedoms illustrate this claim, despite the government’s promises to open the political sphere. For example, homosexuality remains criminalized, and the right to free speech was brought under scrutiny when Qatari poet Mohammed al-Ajami was sentenced to life imprisonment for insulting the royal family.30 In other instances, the Qatari regime has used its wealth to directly suppress democratization, beginning with the manipulation of its state-run media outlet. Al-Jazeera’s imbalanced coverage of the Arab Spring stirred pro-democratic unrest during the Arab Spring.

Qatari complacency stems from economic growth fueled by years of accumulating oil money. A mere 1 percent of Qatars participate in the private sector, yet the nation enjoys an average per capita income of over $100,000.31 The Qatari economy remains one-dimensional, but the public has little incentive to produce change because stability protects their luxurious lifestyle. Oil money shaped Qatari society in such a way that democratic reform would run contrary to many citizens’ interests. Qatar prevails as an allocation state because its citizens benefit from the status quo, and the authoritarian regime remains untouched as a result.

Egypt: A Production State’s Vulnerability to Democratic Upheaval

Former Egyptian President Hosni Mubarak maintained an authoritarian regime for three decades. Despite appearing “inclined towards liberalization” at the beginning of his regime, Mubarak steadily “resorted to oppressive measures to curtail the political space available to the opposition.”32 For example, military courts were frequently used to prosecute dissenters, laws were implemented to limit political party formation, and harsher restrictions were placed on the press.33 As he released his presidency from the informal constraints that earlier limited his rule,34 Mubarak discouraged political pluralism and eradiated the possibility of Egyptian democracy. It is no coincidence that Mubarak’s authoritarian agenda coincided with the high point of Egyptian oil production. During the mid-1990s, Egypt was producing 900,000 barrels per day (more than Qatar’s current production level) while taking in corresponding levels of resource revenue. Although Mubarak faced opposition, a democratic push as fervent as the Arab Spring never materialized against his regime during that period. Oil revenue bought the Egyptian economy a degree of stability and provided Mubarak with a buffer against discontent. As in Qatar, public loyalty rested with the system—albeit a “patriarchal economy with a weak private sector”—and kept an increasingly authoritarian Mubarak protected. The Al-Thani regime’s successful avoidance of a democratic push in Qatar and Mubarak’s failure to survive the Arab Spring in Egypt were determined by each man’s understanding of his own country. Qatar’s small, affluent population is easy to pay off when necessary. It is a prime example of an allocation state, and can distract its critics with managed reform. Riding Egypt’s oil success in the 1990s, Mubarak acted with the arrogant insensitivity of an allocation-state leader. Even at its highest level of production in the 1990s, Egypt was not an allocation state. As Egypt drew closer to the Arab Spring, it was a production state with a confused identity.

By looking at his country’s economic and demographic makeup, Mubarak could have realized that oil could not support his authoritarian regime. Compared to most of the region, Egypt does not have much oil.35 Heading into the new millennium, oil money contributed less than 10 percent of the country’s annual GDP, and Mubarak was rendered vulnerable when production levels began to steadily drop between 2003 and 2007.36 With a drop in production of about 80,000 barrels per day, Mubarak’s oil protection began to evaporate.41 His reaction challenged Allocation-Production State Theory’s conclusion: rather than cracking down during the oil decline, Mubarak’s regime experienced a democratic “high point,” as it permitted Egypt’s first multi-candidate presidential election.42

This isolated instance of vulnerability to pro-democratic fervor represents Mubarak’s miscalculation of how politically powerless his country’s oil supply was becoming. On one hand, Egypt’s production levels were fluctuating because of maturing oil fields.43 On the other, changes independent of oil were affecting Mubarak’s leverage. Rapid growth brought Egypt’s population surging past 80 million.44 While Egypt’s oil output was not drastically smaller than Qatar’s, it had an exponentially larger domestic base to supply before looking to export. The country was heading to a point in 2010 at which oil consumption outpaced production. Depending on oil for 41 percent of its total energy intake, Egypt was eating away at its own supply. Low exportation revenue was Mubarak’s gravest
consequence. Factoring in domestic consumption and subsidies, Egypt was only exporting roughly 100,000 barrels of oil a day—nearly 600,000 less than Qatar—despite relatively comparable production levels.33 Mubarak’s governing apparatus was tied to society because it had to find alternatives to oil for revenue. Nearly 15 percent of the national GDP was comprised of tax revenue,46 resulting in public demands for government accountability and representation. Increased scrutiny met with a regime desperate to hang on to authoritarian power. Unlike a decade earlier, Egypt’s “patriarchal” economy was depending on a government that no longer had a dependable oil source into which to dip.47 Mubarak cut patronage handouts, and left Egypt’s growing population to its own defenses against “rising income poverty, declining consumer purchasing power, and a worsening labor market competition arguments over the oil curse’s origins provide a foundation for exploration.

A Changed Perspective on Arab Democracy

Although oil neither eliminates nor guarantees movement toward democracy, high oil revenues empower authoritarian regimes to deflect the possibility of democratization in their respective countries. Money accumulated from oil exports can help a government separate itself from society, eliminating the necessity of accountability. Rather than setting preconditions for democracy, as Late Rentier Theory would suggest, oil-rich regimes can protect themselves from the powers of globalization by aspiring liberal pressures with managed reform. Categorizing Arab oil producers as allocation and production states based on oil revenue gives causation to Rentier Effect Theory and its belief that oil deters democracy.

Yet that does not imply that Late Rentier Theory’s modernist explanation is useless. In fact, it gives Allocation-Production State Theory a heightened sense of awareness. The process of turning oil wealth into regime protection is no longer as straightforward as reverse taxation. By being cognizant of the deceiving surface-level reforms currently taking place in Arab countries with oil money, the argument in this paper can see the undemocratic truths behind them. Al-Thani’s Qatar and Mubarak’s Egypt reflect key differences between allocation states and production states. Though both are oil producers, each regime endured a different outcome when faced with democratizing pressures. The Qatari emir stockpiled enough oil export revenue to maintain independence from society, while also spending to create a prosperous environment that keeps citizens content with an undemocratic status quo. On the other hand, Mubarak’s continuance of authoritarian practices and successful repulsion of democratic fervor waned because of Egypt’s declining oil production. Without oil revenue to protect his regime and appease the public, Mubarak faced the discontent that led to his ouster during the Arab Spring. In both cases, population demographics and pre-existing policies played variable roles, but the outcomes predicted by the Allocation-Production State Theory came to fruition.

Following this analysis, there are questions that remain without answers. For instance, there is limited consideration of what will happen to the political and economic makeup of allocation states when oil fields eventually dry up. Would managed reforms provide enough structure for society to adapt to environmental change and an undemocratic regime to maintain itself? If public loyalty in these states is to a system instead of its leaders, is there any chance for a push toward democratization without a crisis to catalyze it? While these inquiries must be investigated further, the
The Empty Well: Yemen’s Groundwater Crisis

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Located on the southwestern corner of the Arabian Peninsula, Yemen has a long and lively history. One of the oldest centers of Middle Eastern civilization, Yemen housed the biblical and quranic Sheba, the kingdom of the Sabaeans, who exported frankincense and myrrh to the cultures of the Mediterranean.1 The Yemeni region’s tribal groups converted to Islam in the seventh century CE, retaining their independence until the twelfth century, when the Ayyubids (the dynasty of Saladin) briefly held the city of Sana’a before their expulsion in the 1200s.2 Yemen remained a fractured area for the next seven hundred years. Despite multiple attempts to subjugate the highland Zaydis, a local Shiite sect, the Ottomans failed to bring the region under their rule. In 1839,
the British Empire adjusted this perennially shifting balance of power when its soldiers seized the port of Aden, which remained under British control until 1967. That year saw the creation of the communist People's Democratic Republic of Yemen, which existed alongside the Saudi-influenced Yemen Arab Republic in fractions peace until their unification in 1990. Even today, the unified Yemen Republic experiences contentious politics, with Zaydi separatists and South Yemeni secessionists adding complications for an uneasy government installed after the 2011 Yemeni uprising during the Arab Spring.5

**Yemen's Predicament**

Despite these issues, Yemen faces challenges far beyond its political or sectarian problems: it is poised to run out of water, perhaps as early as 2017.5 Statistics on the issue predict a grim future: Yemen's renewable water resources provide 125 cubic meters per capita per year, less than a tenth of Yemen's renewable water resources provide 125 cubic meters per capita per year.8 Sana'a, the capital, could run out of water, perhaps as early as 2017, in rough concurrence with the water level decreases at a rate of six to eight meters per year.7 According to Yemeni agricultural engineer Abdulrahman al-Eryani, the Sana'a basin "is a common pool resource, " or one in "finite amount that is a rival good. As a result, economists dub water a nonexcludable resource, in that legal and social entities generally cannot restrict access to it. Yet, because the total quantity of water available is limited, one consumer's use of water means that he or she prevents someone else from consuming that amount, meaning that water is a scarce resource. Therefore, users will pay a price for water that directly reflects its scarcity and thus its desirability.

**Economics of a Crisis**

Water is a scarce resource that has both social and market value.12 For example, governments can allocate water in their efforts to restructure traditional methods of agriculture (as Yemeni policymakers have done in subsidizing irrigation for farmers).8 Thus, water as a good impacts more than markets: its supply influences the way people live and the way that societies structure themselves. Furthermore, water's provision and sale produces many externalities. Water's external effects on society include the positive "provision of green spaces" as a result of irrigation, and the negative effects on society that directly reflect its scarcity.16

Furthermore, property rights for water are a complicated issue, as it disregards artificial boundaries, political and private.13 Because water has these characteristics, economists classify it as a nonexcludable resource, in that legal and social entities generally cannot restrict access to it. Yet, because the total quantity of water available is limited, one consumer's use of water means that he or she prevents someone else from consuming that amount, meaning that water is a rival good. As a result, economists dub water a "common pool resource," or one in "finite amount that must be shared in common over a variety of uses" and users.14 In addition to the concern of water ownership, one must consider that renewable supplies of water are largely unpredictable. For this reason, modern societies require a regulated infrastructure to ensure a reliable supply of water, a system that can store renewable water sources and release that supply as needed.

The valuation of that supply is itself a notion that combines a variety of economic principles. One can determine much about how economic actors value water by examining the "maximum price" which they are "just willing to pay for it."17 This price, water's "shadow price," represents how much a consumer would pay for water if the constraints on the water supply were relaxed by one unit. Water's shadow price has two components: the marginal cost of production and scarcity rent. The former simply measures the costs incurred by the supplier to deliver water to the consumer and may consist of any number of expenses related to pumping, piping, purification, and so on. Scarcity rent, on the other hand, occurs as a result of water's finite nature: providing a "user with an additional unit of water" is "not costless" because doing so deprives another consumer of the benefits of [that unit of water].18 Water, especially in the Middle East, is a scarce resource. Therefore, users will pay a price for water that directly reflects its scarcity and thus its desirability.

**Scarcity Worsened by Policy**

The Middle East and surrounding areas are the most water scarce regions in the world. The West Asia and North Africa (WANA) region (which extends from Morocco to the west, Ethiopia to the south, Pakistan to the east, and Turkey to the north) "accounts for a major proportion of the world's dry areas," and desertification of previously arable land poses a significant environmental problem.19 Agricultural activity consumes a greater quantity of water than any other economic sector: 88 percent of all available water in Middle East and North African countries is used for farming, compared to eight percent for domestic and four percent for industrial uses.20 However, in part due to the scarcity of irrigable land for farming, the region currently imports more cereals than any other part of the world.21 The apparent irrationality of such water allocation results from decades of Middle Eastern countries adopting unsound agricultural policies. Governments like Yemen's enacting water subsidies for farmers, begrudged by the prospect of food security in a region whose population and hydrological resource restrictions make such agricultural self-sufficiency impossible.22 The WANA countries' renewable water supplies have fared poorly due to their agricultural policies – the region's annual per capita renewable water resources currently stand at less than 1,500 cubic meters, substantially less than the rest of the world's 7,000 cubic

Shibam, Yemen. Photograph: © George Hammerstein/Corbis
metres per capita. Yemen is in particularly dire straits: as of 2011, the average Yemeni citizen had access to only 82 cubic meters of water per year.19

One common measure used to determine water scarcity is the Falkenmark index, devised by the Swedish researcher Malin Falkenmark. While this index has its limits (water quality, which can pose further limits on water’s use, goes uncalculated), it proves useful in illustrating just how much a country’s population stresses its own water supply. Falkenmark suggests that if a nation has renewable water resources equal to or surpassing 1,700 m³ per capita per year, its water supply is not stressed. Conversely, levels below that threshold indicate increasing economic difficulties associated with water availability. At renewable levels less than 1,000 m³/capita/year, a country will see its economic development hindered by water scarcity. At below 500 m³/capita/year, access to water becomes a main constraint to life.24

Staying off this scarcity has forced Yemen, like so many of its Middle Eastern counterparts, to tap non-renewable fossil groundwater, which lies in aquifers deep beneath ground level.25 In all WANA countries (except Turkey), these underground water reserves have a recharge rate that is effectively zero, resulting in “limits with finite supplies.”26 Meanwhile, primarily due to agricultural demand, renewable water sources in Yemen are being extracted five times faster than they are replenished.27 As Al-Eryani mentioned previously, the residents of the Sana’a basin deplete their renewable resources twice as quickly as the Yemeni average. Yemenis are extracting groundwater faster than it can be replenished, and the economic reasons for this rapid drawing down are a testament to environmentally disastrous policy.

Nearly 40 percent of all Yemenis classified as “economically active” by the Food and Agriculture Organization of the United Nations work as agricultural laborers, indicating the importance of farming to their country’s economy.28 However, the Yemeni government has repeated the mistakes of its fellow Arab states: it subsidizes investment in “improved irrigation equipment,” as well as the diesel necessary to run water pumps.29 These policies artificially depress the cost of extracting water necessary for farming, encouraging farmers to tap non-renewable aquifers that would have otherwise been cost-ineffective to use. As a result, fossil groundwater storage, estimated in 2000 to be 3.22 billion cubic meters (MCM), is slated for depletion around 2015, assuming that the current drawdown rate of 219 MCM per year remains constant.30

Vice and Ecological Tragedy

In a final twist to the frightening prospect of empty aquifers, the crop that consumes more water than any other in Yemen is not a food, but a drug. One may liken the role of qat in Yemeni social life to the role of beer in the U.S. and Europe. While Muslim mystics and poets once used qat as an aid in meditation and composition, chewing it nowadays occurs in an almost exclusively social context and serves as distinct mark of Yemeni culture. The expansion of qat chewing in “limit society” is also a phenomenon of “recent years,” a response to modernization’s threat towards “what it means to be Yemeni.”31

Unfortunately, the qat tree is a thirsty one. Estimates on its consumption of the water used in agriculture vary, but the percentage ranges from 30 percent32 to 40 percent,33 with more recent estimates pegging the number at 37 percent.34 Yet as of 2005, farmers used only ten percent of all cultivable land in Yemen to grow qat.35 This means that a crop grown on only one-tenth of all arable land accounted for nearly four-tenths of all water used to grow crops. The reason Yemeni farmers pour so much of their available water resources into qat cultivation is economically straightforward: producing qat is profitable. Returns analyses of crops grown in the Sana’a and Taiz basins, two of Yemen’s major agricultural centers, indicate that qat has the highest value-to-cost ratio of all crops surveyed.36 Small wonder, then, that qat production – including growing, trade, and transport – provides economic benefits to 15 percent of Yemen’s population.37

Qat’s outsized returns to production feed a vicious cycle. With the depletion of fossil aquifers to farm qat and other crops, farmers must drill deeper to extract what water remains under the ground. Deeper wells cost more than shallower ones, due to increased drilling and pumping expenses.38 As a result, they must grow more qat to cover expenses, using more water to do so. The profitability and water-intensive characteristics of qat cultivation combine to create an ecologically devastating positive feedback loop.

Privatization as Policy

Despite subsidizing the purchase of the advanced irrigation equipment and diesel fuel used to pump water from wells, the water supply policies of the Yemeni government have grown increasingly laissez-faire. Prior to the 1990s, the Southern and Northern Yemeni governments managed water supply networks. The nominally technocratic institutions that supplied water suffered from many common problems of government institutions in the Middle East: overstaffing and “political interference” ensured that government agencies failed to deliver water efficiently.39 Consistently poor reportage resulted in as much as half of all total water production for urban areas remaining unaccounted for.40 In the early 1990s, the unification of Yemen coincided with a wave of neoliberal policymaking by the World Bank, including “decentralization, corporatization, [and] commercialization” to increase the efficiency of the country’s water supply.41 To a large extent, such privatization has had a noticeably positive effect on Yemen’s water supply efficiency. Despite a consistent population growth rate of 3.5 percent, the outsourcing of the water supply to private entities resulted in an increase in the proportion of the urban population “connected to the water supply” by nearly ten percent over a five-year period.42

Under the new privatized system, consumers pay tariffs on the amount of water that they take up. These tariff payments cover the cost of water delivery, including pumping and depreciation expenses. Payments occur on a schedule, increasing in blocks along with consumption. Poor clients, who make up as much as half of water customers and consume the least amount of water, have their tariff costs bracketed
at “lifeline” levels, which are calculated to not exceed five percent of monthly income.46 On average, household expenses on water account for 1.11 percent of total monthly income, as revealed by a budget survey cited by Gerhager et al.47 By contrast, proportional expenditure on qat leaves stands at roughly eight times that of water.48

Despite the increased efficiency of water delivery, Yemen’s decentralization scheme has not proven entirely expense efficient. Most of the local water supply companies do not recover their costs, resulting in increased reliance on government financing and international lending. Two large financial drains that cause private water suppliers’ inability to fully recover their costs occur in investment expenses (on new piping, pumping, and water trucking infrastructure) and the “difficulty of increasing tariffs” to cover costs “due to the high level of poverty” found throughout Yemen. *Financially sustainable successes in privatized water expenditure on qat leaves stands at roughly eight times that of water.48

Financially sustainable successes in privatized water supply have been few and far between in Yemen.

**Pollution and Salinity**

The problems faced by Yemeni policymakers are not restricted to supplies and costs. Pollution of groundwater by wastewater disposal and increasing salinity of the soil due to ecologically inappropriate irrigation techniques remain concerns for Yemen’s government. The San’a drainage basin covers an area of roughly 3,200 square kilometers and is home to 1.8 million people.49 The entire area’s water system is served by a single water treatment plant, which discharges wastewater from its activated sludge treatment ponds. This discharge is rich in nitrates, which are toxic to humans. In the northern areas of the San’a basin, downstream from the wastewater treatment plant’s discharge, the concentration of nitrates may reach as high as 150 milligrams per liter, three times the World Health Organization’s designated acceptable level.10 The continued infiltration of nitrates into the San’a basin’s northern groundwater reservoirs will gradually increase nitrate contamination in the basin, which will in turn pose health problems to the Yemenis living there.11 Proposed solutions, such as building an expensive new water treatment plant and additional sewage piping outside the basin, are infeasible when the local government must already struggle to bear the debt of unprofitable water companies.12

The subsidization of modern irrigation techniques introduces yet another ecological stressor. Modern pumped irrigation techniques, in addition to sucking aquifers dry, “dribebl small amounts of water” in only the first half-foot of field soil.13 Crops root shallowly as a result and tend to wither when water runs short. Traditional Yemeni farming methods, on the other hand, planted deep-rooting grains on mountainside terraces that catch rainwater and allow it to soak deep into the soil. Not only did this technique render crops more resistant to dry spells, but it also ensured that rain would flush away salts through the terraces and into the water table. Modern irrigation methods distribute water shallowly into the ground, causing a buildup of salt in the topsoil. The increasing salinity of farmland eventually makes agriculture impossible.14 Subsidizing newer irrigation techniques has not only hastened the depletion of Yemen’s water table, but also has ensured that future agriculture will prove difficult for Yemeni farmers, if not impossible.

**Envisioning Drier Futures in Yemen and the MENA Region**

With the exception of Turkey and Iran, every single country in the MENA region has renewable water resources at half or less than the Falkenmark index’s stress level of 1,700 cubic meters per capita.15 Based solely on the data, Yemen’s predicament seems less serious than the one facing other countries on the Arabian Peninsula. Kuwait, Qatar, and the United Arab Emirates all have fewer renewable water resources per capita than Yemen, with Kuwait having only seven cubic meters of renewable water resources— a situation more urgent compared to that in Yemen.16 However, Yemen lacks the fossil fuel resources of its northern neighbors to fund solutions such as seawater desalination. The UAE alone desalinates over six million cubic meters of water per day, making Yemen’s desalination capabilities seem negligible.17

Furthermore, Yemen’s problems—like those of other MENA countries—stem from an intersection of demographic and hydrological quandaries. Currently, the MENA region experiences a rate of population growth exceeded only by that of sub-Saharan Africa.18 One economic model predicts that climate change will not have nearly as severe an impact on water availability in the MENA region as the predicted doubling of the population by 2030.19 Even Egypt, which has 96 percent of its water sourced by the Nile River, faces the prospect of its per capita water availability falling to about a third of the Falkenmark index’s stress level by 2025.20

Yemen’s agricultural issues typify those of the broader region. The diesel pumps used in Yemen to extract groundwater operate across the region, draining aquifers from the thousands of illegal wells that supply farms in Jordan, the Gaza Strip, Libya, and elsewhere. Declining water tables in these countries have led to “seawater intrusion,” in which saline water from the ocean infiltrates the depleted aquifer and contaminates any remaining freshwater.21 Efforts to curb illegal drilling by farmers and reallocate water have met strong resistance. Such efforts are especially difficult given the existence of a “farm lobby” in many MENA countries, a powerful interest group engendered by increased state investment in agriculture in the 1980s, when fear of a “reliance on foreign [food] supplies” motivated increased spending on farmers.22 The dry future of the Arab world has not inspired sufficient action by constituents or policymakers. Yet these problems involving the water supply intersect in Yemen: its ability to desalinate lags its Gulf neighbors due to its poverty; its fertility rate is the highest in the MENA region; and it has one of the highest population proportions of farmers in the Arab world.23

The Prospect of Emigration

As the prospect of groundwater depletion rapidly draws near, it appears that Yemen will do little (if anything) to address its impending water crisis. In that case, many Yemenis will face two stark options: migrate or die. Not all Yemenis in regions affected by groundwater depletion will have to move, as renewable water will continue flowing, but thousands will. These potential migrants will certainly include some of Sanaa’s nearly two million inhabitants.65 Migration due to water shortages has occurred in the past; for example, the Indian Tughlaq dynasty had to abandon its capital, the spectacular city of Daulatabad, in the fourteenth century due to a lack of water. Yemen will not likely replicate the experience of Pakistan’s Baluchistan province in 2000, when a drought resulted in the migration of one million people to find “food, water, and employment.”66 Instead, Yemen will probably mirror the experience of Baluchistan’s people today, who continue to emigrate “in search of water due to a depleting underground water table.”67 These migrants do not emigrate due to an immediate crisis coupled with the “strong hope of return.”68 The situation which Baluchistan’s inhabitants face today and the one which Yemenis will face in the near future would be referred to in the future in the heart of Yemen’s highlands, 7,226 feet above sea level.78 The cost associated with delivering water to inhabited areas such as Sanaa, which lies in the heart of Yemen’s highlands, 7,226 feet above sea level.77 To deliver water to the city, engineers would have to run piping for 155 miles and build stations to pump the water over the 9,000 foot mountains that ring Sanaa’s valley.79 The cost associated with delivering water through this infrastructure would be exponentially higher than the base cost of desalination; Lichtenhaeler estimates that it would jump to around 10 USD per cubic meter.80 While households might be willing to pay the extra costs, the increased expense to farmers would make their livelihoods financially untenable. As such, desalination seems untenable as an option to help Yemenis stave off migration.

The Desalination Option

Needless to say, migration as a solution to Yemen’s water crisis is politically unpalatable at best and a humanitarian crisis at worst. One potential solution could at least blunt the impact of groundwater depletion: desalination. Other Arab Gulf countries have employed it with great success: Qatar and Kuwait both source about 40 percent of their water from desalination, while Bahrain and the UAE each obtain about 25 percent.81 However, these oil-rich states have the advantage of substantial commodity export income and smaller populations. And there can be no doubt that each of these countries has paid a high price for its desalinated water. A report by the 2030 Water Resources Group reveals that, per cubic meter, desalinated water costs $0.80 on average to supply.82 That cost is roughly eight times the figure associated with pumping groundwater, and makes desalination one of the costliest ways to supply people with water.83 Furthermore, in addition to requiring large outlays to sustain, desalination is also energy-intensive. The significance of the efficiency gains, however, has not stopped countries with significant desalination investment like Qatar and the UAE from using 10 percent to over 20 percent of their total energy consumption to purify seawater.84 If the Yemeni government could afford to invest in desalination technology, it would have to grapple with the logistics of transporting that water to inhabited areas such as Sanaa, which lies in the heart of Yemen’s highlands, 7,226 feet above sea level.78 The cost associated with delivering water to the city, engineers would have to run piping for 155 miles and build stations to pump the water over the 9,000 foot mountains that ring Sanaa’s valley.79 The cost associated with delivering water through this infrastructure would be exponentially higher than the base cost of desalination; Lichtenhaeler estimates that it would jump to around 10 USD per cubic meter.80 While households might be willing to pay the extra costs, the increased expense to farmers would make their livelihoods financially untenable. As such, desalination seems untenable as an option to help Yemenis stave off migration.

A Middle Ground

Neither solution—migration nor desalination—seems by itself appropriate for Yemen. The first would incur an unacceptable human cost, while the latter would be costly and still result in the migration of farmers from rural areas in search of work. At this point, the solution for Yemen lies in combining smaller-scale proposals such as cutting water consumption, constructing desalination plants, and lessening the demographic blow of inevitable rural-urban migration. The first measure to make water use more efficient lies in utilizing the private water market, which has already proven successful. This market offers a key economic benefit in that “it ensures that water is reallocated from lower- to higher-value uses,” a distinct advantage of free markets in general.85 The next step Yemeni policymakers must take is to institute and enforce a system of “sustainable . . . and tradable water rights,” much like the system for emissions trading currently used in the European Union.86 Converting informal notions of water rights, however, into a formal system with quantitative entitlements governed by the “rule of law” is a difficult proposition in a country whose politics teeter on the brink of chaos.87 Perhaps a more viable proposition to reduce water consumption lies in importing more qat and food into Yemen. These imports would represent an intake of “virtual water,” a term coined by the geographer J.A. Allen to refer to the water contained in imports of food and other consumables.88 Yemeni policymakers have considered the idea of importing qat for some time, but they met with substantial resistance from local farm interests. The solution currently favored lies in establishing a Yemeni “farmer-owned operation in Ethiopia,” a cooperative venture which would grow qat for export to Yemen. They could then redistribute its revenues among Yemeni farmers as compensation for not growing a water-intensive cash crop.89 Water saving will result, all the more so if farmers do not grow other crops instead of qat. Beyond qat, Yemeni politicians, along with the others in the MENA region, have realized the necessity of food imports: at the turn of the twentieth century, countries across the Arab world
imported virtual water over the course of a year whose quantity exceeded the “annual flow of the Nile River.”85 That figure has certainly increased with the decrease in the region’s water resources, and Yemen necessarily will contribute to its steady uptick.

Finally, technology could itself play in favor of the Yemeni government – despite the energy intensive nature of desalination, one proposal to construct a solar-powered seawater treatment plant may provide a solution to Sana’a’s water needs. According to analysis by Dr. Towfick Sufian of Sana’a University, using solar power to provide energy to desalination plants in the coastal town of al-Hudaydah would be a cost-effective, ecologically sustainable solution to the Yemeni capital’s lack of water. The reduced cost of solar energy (which would still incur infrastructure setup costs estimated at two billion USD) would permit the government to bill the pumping expense to consumers at a price of three USD per cubic meter and break even on all costs in the fifth year of operations.86 Even with setup costs tripled, the project would still break even within fifteen years of initiation and supply Sana’a with 200 million cubic meters of water per year, the city’s projected need by 2020.87

Even with the water needs of its growing population met, Sana’a and its government (along with other Yemeni cities) will still need to prepare for the flow of migrants from rural areas. Failing environmental conditions in the countryside have driven farmers to migrate to cities elsewhere in the MENA region – North African and Sudanese cities have recently seen an “influx of drought refugees,” and Yemen seems poised to experience the same kind of population shift.88 In the end, its experience will not differ from other Arab countries whose governments enacted “misguided agricultural policies” that resulted in “incentives for rural people to move to town.”89 Urbanization brings its own set of challenges, such as housing (economists have extensively documented the explosion of shantytowns in MENA cities) and waste management – already in Yemen, more than half of all garbage in cities goes uncollected.90

**Towards the Future**

Whether Yemeni policymakers can implement the changes necessary to guide their nation through a time of rapid environmental change remains uncertain. Setting up a revenue distribution system to compensate qat farmers, enacting stricter water market regulation, and securing a loan to fund construction of the desalination facility would pose challenges even for a country with stable internal politics. Yemen’s political leaders must confront violent secessionist movements by Southern Yemenis and Zaydis in the northern highlands. Additionally, al-Qaeda in the Arabian Peninsula (AQAP) has increased terrorist agitation in Yemen in response to the government’s “strong and growing partnership”91 with the U.S., including substantial American military activity in the country.

One of the Arab world’s most beautiful and ancient countries looks into an abyss of political and environmental tragedy. Yet the Yemeni situation has not become hopeless. The solutions to the country’s coming water crisis are feasible, with international support the changes necessary to guide their nation through a time of rapid environmental change remains uncertain. Setting up a revenue distribution system to compensate qat farmers, enacting stricter water market regulation, and securing a loan to fund construction of the desalination facility would pose challenges even for a country with stable internal politics. Yemen’s political leaders must confront violent secessionist movements by Southern Yemenis and Zaydis in the northern highlands. Additionally, al-Qaeda in the Arabian Peninsula (AQAP) has increased terrorist agitation in Yemen in response to the government’s “strong and growing partnership”91 with the U.S., including substantial American military activity in the country.

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