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International Security

Realized Water Scarcity and Implications for Water Conflict Analysis

The 1975 Euphrates River Crisis

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The entry into an entirely new field of study can be daunting. Having worked for a number of years as a civil engineer, the field of international relations has at times seemed inspiring, liberating, and utterly confounding. In undertaking research on water conflict, I hoped to combine the best of my professional experience and training in engineering with the best of my admittedly limited understanding of international relations theory. In developing the latter, I owe a great deal of thanks to those who supported and guided this undertaking. I am indebted to Stéphane Lacroix for stepping outside his domain of expertise and, in doing so, for drawing me into previously unknown and illuminating intellectual territory. Mark Zeitoun and the members of the London Water Research Group have been supportive and welcoming.

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Summary

Considerable research has been devoted to identifying the causal links between water and conflict. Initial work focused on water wars[1,2] stemming from growing scarcity of fresh water resources[3,4,5]. However, interstate war over scarce water resources has yet to emerge as the scourge of the 21st century.[6] Wolf et al.'s[7] analysis of interstate interactions over water resources found that the majority of interstate interactions tend towards cooperative rather than conflictive behaviors. This finding lead to a dramatic shift in discourse concerning water conflict, which evolved from one of interstate water wars to interstate water cooperation. While the primary narrative often attributed to the Wolf et al.[8] study is one of interstate cooperation, the same authors indicated that no correlation, let alone a causal link, between any of the "factors traditionally considered to be relevant indicators of international conflict, and of water conflict in particular"[9] and instances of water conflict or water cooperation had been identified.

The factors associated with water conflict – population dynamics, climate, and dams among many others – are derived from our conception of water scarcity. However, water scarcity remains a vaguely defined term. What is water scarcity? How does our conception of water scarcity affect the conclusions that can be drawn about the connections between water scarcity and interstate conflict over scarce water resources? One major problem with the search for correlation between water conflict and water scarcity is that states unable to satisfy domestic water demand with domestic supply have alternatives. Allan[10] proposed that the food water and trade nexus, also referred to as virtual water, has effectively shielded states

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[1] John K. COOLEY, 'The War over Water', *Foreign Policy*, 54 (1984), p. 3-26.
[2] Joyce R. STARR, 'Water Wars', *Foreign Policy*, 82 (1991), p. 17-36.
[3] Sandra POSTEL, *The last oasis: Facing Water Scarcity* (London, UK; Earthscan Publications, 1992).
[4] Igor SHIKLOMANOV, 'World fresh water resources' in Peter H. GLEICK (Editor), *Water in Crisis: A Guide to the World's Fresh Water Resources* (New York, NY: Oxford University Press, 1993), p. 13-24.
[5] Peter H. GLEICK, 'Water and Conflict: Fresh Water Resources and International Security', *International Security*, 18/1 (1993), p. 79-112.
[6] Sandra L. POSTEL, Aaron T. WOLF, 'Dehydrating Conflict', *Foreign Policy*, 126 (2001), p. 60-67.
[7] Aaron T. WOLF, Shira B. YOFFE, Mark GIORDANO, 'International waters: identifying basins at risk' *Water Policy*, 5 (2003), p. 29-60.
[8] Ibid., 29-60.
[9] Shira YOFFE, Greg FISKE, Mark GIORDANO et al., 'Geography of international water conflict and cooperation: Data sets and applications', *Water Resources Research*, 40 (2004), p. 8.
[10] Tony ALLAN, *The Middle East Water Question: Hydropolitics and the Global Economy* (London, UK: I. B. Taurus & Co., 2001).

from water scarcity through access to global food markets. In incorporating virtual water into our understanding of water scarcity, it becomes evident that virtual water relieves the pressures and tensions that would otherwise connect domestic water deficits to interstate water conflict. By identifying failures of the virtual water system, it becomes possible to separate events of realized water scarcity from events of water scarcity mitigated by virtual water.

Following the proposal of realized water scarcity as an analytical approach, a case study of the 1972-75 global food crisis, as experienced in the Tigris-Euphrates River basin, is presented. The 1972-75 global food crisis was the unintended consequence of U.S. food policy, adverse global climatic conditions, and the Arab oil embargo against the United States, Israel, and Western Europe following the 1973 October War.[11] The associated sustained price spikes for food staples occurred at a time when Iraqi domestic agricultural production decreased by as much as 70%. The combination of the 1973-1975 drought in the Tigris-Euphrates River basin, massive crop failure in Iraq, hydrologic uncertainty associated with the construction of dams in Turkey and Syria, and the 1972-75 global food crisis resulted in the realization of water scarcity in Iraq. In effect, between 1972 and 1975 all the factors mitigating water scarcity at the state level in Iraq were removed concurrently. Without recourse, Iraq entered into intense conflict, if not outright war, with Syria over flow allocations in the Euphrates River.

The interactions between the primary riparians of the Tigris-Euphrates River basin – Turkey, Syria, and Iraq – during the 1975 Euphrates River crisis are presented through a dual constructivist-realist approach inspired by Zeitoun's "framework for hydro-hegemony."[12] Iraq and Syria both exercised hard and soft power throughout the crisis. While exercise of hard power through the mobilization of both Syrian and Iraqi troops was clear, the symbolic exchanges[13] between Iraq and Syria in the media were an exercise of soft power.

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[11] Derek HEADEY, Shenggen FAN, 'Reflections on the Global Food Crisis', *International Food Policy Research Institute Research Report Series*, 165 (2010), p. 81-85. http://ebrary.ifpri.org/cdm/compoundobject/collection/p15738coll2/id/5724/rec/9, accessed 17 February 2013.
[12] Mark ZEITOUN, Jeroen WARNER, 'Hydro-hegemony – a framework for analysis of trans-boundary water conflicts', *Water Policy*, 8 (2006), p. 435-460.
[13] Michael N. BARNETT, *Dialogues in Arab Politics: Negotiations in Regional Order* (New York, NY: Columbia University Press, 1998), 376p.

This study represents the first steps both in the conceptualization of realized water scarcity as an analytical tool and in the application of realized scarcity to aid understanding of the links between water scarcity and water conflict. A single, in-depth case study was utilized, rather than multiple shallower investigations, in order to provide insight into the regional constraints against and drivers of conflict in a particular case of realized water scarcity – the 1975 Euphrates River crisis. Given the limited breadth of this study, the conclusions drawn are recognized to be tentative. It is hoped, however, that the conceptual development of realized water scarcity will provide an analytical tool that yields better understanding of the relationship between water scarcity and water conflict.

Chapter 1 Quantifying Water Supply and Demand

Section 1.1 Global Water Yield

Nearly all life on Earth – from the most basic single-celled organism to the most complex flora and fauna – depends directly upon water. Humans depend upon water to quench our thirst, to grow our food, for trade, for recreation, and for managing waste. Amphibians, cetaceans, fish, and birds depend on water for habitat. The atmosphere relies on water's ability to act as a heat and carbon sink, thereby moderating global atmospheric temperatures. All of these life support systems are interconnected in the water cycle.

Roughly 70.8% percent of the Earth's surface is covered by water, and present estimates of the volume of global water are 1.39 billion km^3.[14] While such a massive quantity of water seems infinite, human life is dependent upon a critical subset of global water: fresh water. The total volume of fresh water on Earth is only 35 million km^3, roughly 2.53% of all water.[15]

Table 1 presents the fresh water reserves on Earth, according to Shiklomanov.[16] The overwhelming majority of fresh water, approximately 69.56%, is trapped in polar ice caps, glaciers, and permafrost. Owing to its concentration in largely unpopulated polar regions and high mountains, these frozen fresh water resources are largely unavailable for human use.

The second largest fresh water resource, groundwater and soil moisture, accounts for 30.15% of all fresh water. A minor portion of groundwater, 0.05% points, is moisture locked in the interstitial spaces of surficial soils. While soil moisture plays an important role in agriculture, it is also unavailable for human consumption. Of the remaining groundwater deposits, some continue to be replenished on an annual basis through infiltration and percolation while others are fossil deposits that no longer receive appreciable recharge.[17] In coastal areas, existing fresh water groundwater deposits face constant pressure from salt-water intrusion.

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[14] SHIKLOMANOV, Op. Cit. 13.
[15] Ibid., 13.
[16] Ibid., 13.
[17] POSTEL, Op. Cit. 31.

Table 1 : Fresh water reserves on Earth[18]

Type	Volume (10^3 km^3)	Percentage of fresh water (%)
Glaciers, permanent snow cover, ground ice, and permafrost	24,364	69.56
Groundwater and soil moisture	10,546.5	30.15
Lakes and rivers	93.12	0.266
Other	25.49	0.024
Total	35,029	100

The third largest source of fresh water is surface water – lakes and streams. Unlike frozen water and groundwater, which form considerable percentages of all fresh water, only 0.266% of global fresh water is present in lakes and streams. Fresh water in lakes and streams accounts for a mere 0.007% of all water on Earth. Two-thirds of stream flow runs off in annual floods.[19] The only means of increasing the capture of stream flow for human use is through the protection of floodplains and the construction of flood control dams. Because lakes and streams are reliable and easy to access, historical patterns of human development maintained a geographic connection to these resources. The majority of humans today depend upon lakes and rivers for water supply, though urbanization tends to cause humans to depend increasingly upon distant streams and lakes. This trend is particularly evident in water management in the southwestern United States, though interest in a Turkish "peace pipeline" in the Middle East illustrates the same phenomenon.[20]

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[18] SHIKLOMANOV, Op. Cit. 13.
[19] POSTEL, Op. Cit. 28.
[20] Aaron T. WOLF, *Hydropolitics along the Jordan River; Scarce Water and its Impact on the Arab-Israeli Conflict* (Tokyo, Japan: United Nations University Press, 1995) p. 92.

According to Postel, human fresh water use in 1992 was estimated at 4,340 km^3 of the approximately 14,000 km^3 of fresh water that is considered renewable annually.[21]

Section 1.2 Geographic Distribution of Water

The small percentage of global freshwater that is accessible is subject to another peculiarity: heterogeneous geographic distribution. Annually, 505,000 km^3 of water is evaporated from the oceans, with 10% of this total falling as precipitation on land. Another 68,500 km^3 of water evaporated from land returns to land as precipitation.[22] In total, 119,000 km^3 of precipitation falls on land annually.[23] The distribution of this precipitation is dictated by systems so complex as to appear essentially random.

The solar power of the sun, and thus evaporation from the oceans and the land, is concentrated about the equator. At the poles the sun's rays strike the Earth obliquely, limiting the heat available for evaporation and resulting in the development of polar ice. The unequal distribution of heat in the Earth's atmosphere and the regular rotation of the Earth about its axis creates prevailing winds, which largely determine where atmospheric moisture will fall as precipitation. Convection cells – the Hadley cells, Ferrell cells, and Polar cells – circulate moisture away from the equator.

The Hadley Cells distribute moist equatorial air northwards and southwards away from the equator, resulting in high rainfall in the tropics. As the convection currents continue outwards from the tropical zones into the subtropics, they are increasingly dry. As such, the subtropical zones are relatively arid with desert climates prevailing in the Middle East and North Africa, the American southwest, the Atcama in Chile, the Australian outback, and the Kalahari in Botswana. A second stable set of cells, the Polar Cells, are essentially dry cyclonic atmospheric currents maintained in perpetuity by Coriolis forces at the northern and southern poles. The Ferrell cells are the unstable currents lying between the Hadley and Polar cells.

These solar-based atmospheric systems are subjected to variation resultant from the irregular shapes of continents, surface roughness, climatic feedback, and long-term weather systems.

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[21] POSTEL, Op. Cit. 28, 39.
[22] SHIKLOMANOV, Op. Cit. 15.
[23] Ibid., 15.

Such factors account for differences in precipitation and runoff on the various continents. Table 2 presents the annual river runoff and the specific discharge, effectively runoff per unit of area, for various land areas of the globe. Each territory receives different amounts of rain that translate into different quantities of runoff. However, by normalizing runoff with land area, we see an explicit demonstration of geographic variability of affecting the quantity of water available in streams and rivers. Australia is very dry, while the rest of Oceania, situated about the equator within the tropical zone, is the wettest of all the territories by far.

Table 2 : Runoff by Continent[24]

Territory	Annual River Runoff (km^3)	Specific Discharge ($l/s/km^2$)
Africa	4,570	4.8
Antarctica	2,230	5.1
Asia	14,410	10.5
Australia	348	1.4
Europe	3,210	9.7
North America	8,200	10.7
Oceania	2,040	51.1
South America	11,760	21.0

Global climate change also poses the problem of changing long-term weather patterns and temperatures. Changes in the volume and geographic distribution of precipitation may adversely impact some states. Temperature changes, particularly temperature increases will increase evapotranspiration rates. Global climate change will substantially impact precipitation and temperature at the boundaries of the Hadley cells.[25] Unfortunately for Middle Eastern states, global climate change may result in reduced agricultural production in

[24] Ibid., 15.
[25] Celeste M. JOHANSON, Qiang FU, 'Hadley Cell Widening: Model Simulations Versus Observations', *Journal of Climate*, 22/10 (2009), p. 2713.

North America and Europe, the primary sources of food imports for the Middle East[26]. As we shall see, a reduction in food available for purchase from the global market will increase the occurrence of realized water scarcity.

The hydrologic uncertainty associated with the quantity, location, timing, and intensity of precipitation and runoff defines the underlying constraint within which states act to supply an adequate quantity of fresh water. The availability of fresh water at any location on the planet is both limited in quantity and subject to uncertainty. Fresh water falls unequally over the globe, and unlike in earlier periods of human development, it is not always present in abundance where modern civilizations have elected to concentrate people. Municipal water in most modern cities falls as precipitation in far off basins and is conveyed over long distances, using energy-intensive pumps and costly infrastructure. A further complication, climate change, threatens a future where patterns of precipitation and temperature may differ significantly from the past.

Section 1.3 Water Quality

Water quantity and uneven global distribution are only two parts of the larger problem of water scarcity. The quality of water, varying along a spectrum from potable to sewage, further reduces the supply of fresh water available to humans.

Water can be re-used. On one hand, re-use increases the total quantity of fresh water available. Israel, for example, uses 103.5% of its water supply annually through wastewater reclamation.[27] On the other hand, repeated use of the same water results in degradation of the resource. Each time that water is withdrawn and used, a portion is consumed and a portion is usually returned to the hydrologic cycle. The returned portion often contains contaminants. Water used in industrial processes can contain heavy metals, inorganic and organic compounds, and pathogens. As much as 80% of water used for traditional irrigation is lost to evaporation, but the portion that percolates into groundwater or drains to nearby streams

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[26] A. Y. HOEKSTRA, P. Q. HUNG, 'Virtual Water Trade: A Quantification of Virtual Water Flows Between Nations in Relation to International Crop Trade', *IHE Delft Value of Water Research Report Series*, 11 (2002), p. 36-37, http://www.unesco-ihe.org/Project-Activities/Project-Portfolio/Virtual-Water-Trade-Research-Programme/Hoekstra-A.Y.-Hung-P.Q.-2002-.-Value-of-Water-Research-Series-No.-11-UNESCO-IHE, accessed 13 October 2012.

[27] Ibid., 41.

often contains fertilizers, fecal coliforms, pathogens, pesticides, and excess sediment. Water consumed by humans is discharged as sewage, often untreated. Even wastewater that undergoes primary, secondary, and tertiary treatment still contains traces of pathogens, fecal coliforms, hormones, and other soluble pollutants.

Water quality reduces access to potable fresh water both in time and space. Temporally, contaminants introduced into waterways bond with sediments that become deposited in lakes and reservoirs. The persistence of toxins can thus impact water and food supplies derived from polluted water bodies over long periods of time. Bioaccumulation of toxins in fish, for example, may eventually lead to illness or death in humans that depend a polluted watercourse for food. Spatially, contaminants introduced into a river are transported downstream by flowing water. Point source or non-point source pollution can thus impact a very wide geography even if the contaminant is produced in a confined locale. In transboundary watershed, the downstream party is often left to deal with poor water quality directly resultant from actions, or inaction, of upstream riparians. The Israelis often complain about an "ecological intifada" flowing from West Bank sewers into Israel.[28] At Al-Nassiriah, Iraq, in the lower reaches of the Euphrates River, total dissolved solids (TDS) have risen from 1080 ppm in 1979 to 4050 ppm in 2001, largely because of agricultural projects in Syria and the GAP project in Turkey.[29]

Exempting energy-intensive desalination, no widely available resource is directly fungible for fresh water. Human beings must consume approximately 5 L of water daily for survival, and require a minimum of 50 L per day to cover basic human needs.[30] With no alternative but to consume water, downstream riparians may be faced with the choice of death by dehydration – abstaining from drinking non-potable water – or the likelihood of death by disease – drinking non-potable water. In short, a non-potable water source may not provide any benefit regardless of its volume or flow rate.

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[28] Elad BENARI, 'The Arabs are Conducting an Ecological Intifada', *Arutz Sheva*, 2010, http://www.israelnationalnews.com/News/News.aspx/141151#.UVg3MfdTjWN, accessed 21 January 2012.
[29] Khayyun A. RAHI, Todd HALIHAN, 'Changes in the salinity of the Euphrates River system in Iraq', *Regional Environmental Change*, 10/1 (2010), p. 27.
[30] Peter H. GLEICK, 'Basic Water Requirements for Human Activities: Meeting Basic Needs', *Water International*, 21 (1996), p. 83-84.

Section 1.4 Growth in Water Demand

The relative dearth of fresh water, its uneven distribution globally, and the problem of water quality all impact the supply-side of water scarcity. And yet, if there were no people, there would be no water scarcity. With a relative abundance or scarcity of water the natural environment adapts. Clearly, water scarcity as experienced by humans is linked inextricably to human demands for water. This section introduces demand-side water scarcity.

The global population in 1900 was 1.65 billion, but had grown to 7 billion by 2011.[31] Understanding that global fresh water is essentially constant from year to year, population growth alone resulted in a 76.4% reduction in per capita fresh water resources across the globe. This trend is not distributed evenly across all continents and states. Table 3 presents the per capita available fresh water for each continent over the second half of the 20th century. Population growth in Africa, South America and Asia resulted in a disproportionately high percentage decrease in fresh water compared to the North America or Europe. The decrease in global per capita fresh water supply is not itself proof that water has become scarce, but it is a clear indicator of the link between population growth and water scarcity.

Table 3 : Water Availability Over Time by Continent[32]

Continent	Water Availability (10^3 m^3 per capita)					Percent Change 1950 – 2000 (%)
	1950	1960	1970	1980	2000	
Africa	20.6	16.5	12.7	9.4	5.1	-75
Asia	9.6	7.9	6.1	5.1	3.3	-66
Australia and Oceania	112	91.3	74.6	64	50	-55
Europe	5.9	5.4	4.9	4.6	4.1	-31
North America	37.2	30.2	25.2	21.3	17.5	-53

[31] UNITED NATIONS SECRETARIAT, DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS, POPULATION DIVISION, 'The World at Six Billion' (web document) (1995), http://www.un.org/esa/population/publications/sixbillion/sixbillion.htm, accessed 27 March 2013.
[32] SHIKLOMANOV, Op. Cit. 22.

South America	105	80.2	61.7	48.8	28.3	-73

With unequal distribution of global fresh water and with population growth largely occurring in the developing world, water scarcity is not an immediate concern for all states. While North America currently has plenty of water and is in fact a net exporter of water through trade in water-intensive agricultural and manufactured goods,[33] in the Middle East and North Africa demand exceeds supply. This fresh water deficit in the MENA region has existed since approximately 1970.[34]

In addition to population growth, demand for water increases with development. Per capita water withdrawals in the United States increased from 500 gallon per capita per day in 1900 to a peak of 2,000 gal/p/d in 1975.[35] While per capita water withdrawals have decreased over the past 35 years, withdrawals remain as high as 1,500 gal/p/d.[36] The increase in water withdrawals correlates directly to an increase in living standards and the flow of population into urban centers. "Water withdrawals are predicted to increase by 50 per cent, and 18 per cent in developed countries."[37]

The massive increase in water demand associated with development is largely derived from the water necessary to grow food. Water experts typically assume that the average human being will require 1000 m^3 annually to provide adequate sanitation, water, and food.[38,39] Averaged globally, 1,334 m^3 of water is necessary to grow one metric ton of wheat.[40] However, these estimates tend to reflect almost exclusively the amount of water necessary to grow food in temperate zones. Areas with substantially higher evapotranspiration –

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[33] HOEKSTRA and HUNG, Op. Cit. 37.
[34] ALLAN, Op. Cit. 5.
[35] PACIFIC INSTITUTE, 'Fact Sheet on Water Use in the United States' (2009), p. 2, http://www.pacinst.org/press_center/usgs/US%20Water%20Fact%20Sheet%202005.pdf, accessed 26 November 2012.
[36] Ibid., 2.
[37] UNITED NATIONS ENVIRONMENT PROGRAMME, 'Sudan Post-Conflict Environmental Assessment', *UNEP Disasters and Conflicts Publications*, (2007), p. 121. http://postconflict.unep.ch/publications/UNEP_Sudan.pdf, accessed 20 March 2013.
[38] GLEICK, 'Water and Conflict: Fresh Water Resources and International Security', Op. Cit. 79-112.
[39] Malin FALKENMARK, 'The Massive Water Scarcity Now Threatening Africa: Why Isn't It Being Addressed?', *Ambio*, 18/2 (1989), p. 112-118.
[40] A. K. CHAPAGAIN, A. Y. HOEKSTRA, 'Water Footprints of Nations, Volume 1: Main Report, *UNESCO Institute for Water Education Research Report Series*, 16 (2004), p. 41, http://www.unesco-ihe.org/content/download/2608/26887/file/Report16_Volume1.pdf, accessed 20 October 2012.

particularly the Middle East and North Africa – require substantially greater volumes of water to produce the same ton of produce. Production of one metric ton of cereals in Iraq requires approximately 9,000 m^3 of water, while in Syria and Turkey, 3,000 m^3/ton and 1,500 m^3/ton, respectively, are necessary to grow the same ton of wheat.[41]

For beef production, the globally averaged volume of water needed for production is roughly ten-fold that of cereal production, 15,500 m^3/ton.[42] Worldwide meat consumption per capita has increased from 24.2 kg in 1964-66 to 36.4 kg in 1997-99.[43] There is, however, a substantial split between meat consumption in developing and industrialized states. Annual per capita meat consumption in the industrialized world is 88.2 kg while developing nations average 25.5 kg.[44] As meat becomes more prevalent in the diets of the developing world, the quantity of water per capita required to meet food demands increases rapidly. Thus, assuming a relatively standard diet, we see that dietary changes compound the increase in demand from population growth.

The rapid growth in water demand associated with the production of food has been offset marginally by technological improvements such as drip-irrigation and genetically engineered plants that can grow with less or even slightly saline water. However, any future gains in irrigation efficiency are likely to be offset by reduced productivity of irrigated arable land due to salination and waterlogging.[45] Indeed, according to Seckler et al.:

> "There are ominous signs that yields of major cereals are stagnating in many of the highest most productive areas of the world. Also, much of the existing irrigated area is being lost to urbanization, diversions of water from agriculture and increasing salinity."[46]

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[41] Ibid., 64.
[42] Ibid., 9.
[43] Jelle BRUINSMA (Editor), 'World Agriculture: Towards 2015/2030, *FAO Earthscan*, (2003), p. 87, ftp://ftp.fao.org/docrep/fao/005/y4252e/y4252e.pdf, accessed 27 March 2013.
[44] Ibid., 87.
[45] David PIMENTEL, James HOUSER, Erika PREISS, et al., 'Water Resources: Agriculture, the Environment, and Society', *BioScience*, 47/2 (1997), p. 104.
[46] David SECKLER, David MOLDEN, Randolph BARKER, 'Water Scarcity in the Twenty-first Century', (web document) (1998), p. 5, http://pdf.usaid.gov/pdf_docs/PNACH595.pdf, accessed on 5 November 2013.

Meeting the growth in demand for potable fresh water and food will be a significant challenge of the 21st century.

Section 1.5 The Right to Water

International law has long recognized a state obligation to provide for the basic water requirements of its population. The 1966 International Covenant on Economic, Social and Cultural Rights (ICESCR) in Article 11.1 calls for:

> "The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing."[47]

In 2002, General Comment No. 15 to the ICESCR clarified in paragraph 3 that:

> "Article 11, paragraph 1, of the Covenant specifies a number of rights emanating from, and indispensable for, the realization of the right to an adequate standard of living 'including adequate food, clothing and housing'. The use of the word 'including' indicates that this catalogue of rights was not intended to be exhaustive. The right to water clearly falls within the category of guarantees essential for securing an adequate standard of living, particularly since it is one of the most fundamental conditions for survival."[48]

Explicit recognition of an individual's right to water also implies that states have obligations with regards to the right to water. Part III of General Comment No. 15 to the ICESCR details the positive and negative obligations of states with respect to provision of water within their boundaries. Moreover, GC No. 15 specifically recognizes, in paragraph 18, that states possess substantial flexibility in how they may meet their obligations:

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[47] UNITED NATIONS HIGH COMMISSIONER FOR HUMAN RIGHTS, 'International Covenant on Economic, Social, and Cultural Rights', United Nations (web document) (1966) p. 4 http://www.ohchr.org/Documents/ProfessionalInterest/cescr.pdf, accessed on 12 March 2013.

[48] UNITED NATIONS ECONOMIC AND SOCIAL COUNCIL, 'Substantive issues arising in the implementation of the International Covenant on Economic, Social, and Cultural Rights: General Comment 15', United Nations (web document) (2002) p. 2 http://www.unhchr.ch/tbs/doc.nsf/0/a5458d1d1bbd713fc1256cc400389e94/$FILE/G0340229.pdf accessed 12 March 2013.

> "Realization of the right should be feasible and practicable, since all States parties exercise control over a broad range of resources, including water, technology, financial resources and international assistance, as with all other rights in the Covenant."[49]

GC No. 15, however, does not merely concern itself with domestic obligations of states, but proceeds to detail states' obligations to other states. Paragraph 31 states that "States parties have to respect the enjoyment of the right in other countries."[50] Moreover, in paragraph 32:

> "States parties should refrain at all times from imposing embargoes or similar measures, that prevent the supply of water, as well as goods and services essential for securing the right to water. Water should never be used as an instrument of political and economic pressure."[51]

Such language is an extension of the 1997 Convention on the Law of Non-navigational Uses of International Watercourses, which while not currently in force, is becoming a basis for customary international law. The 1997 Convention in Part III lays out principles and procedures for coordination between co-riparians, while Article 29 and 33 lay out the groundwork for dispute resolution. Clearly, current international law recognizes the right to water for the individual, the obligations this places upon the state, and the potential for states to come into conflict over access to fresh water.

Section 1.6 Conclusion

Water, once perceived as an infinite resource, is actually a finite resource.[52] Furthermore, fresh water is a resource crucial to life, human and otherwise, on planet Earth. Unequal global distribution of fresh water as precipitation creates geographic zones of relative abundance and scarcity. Global climate change threatens to redistribute precipitation away from geographic areas that historically have sufficient or excess supply to support their populations. In addition to quantity-based scarcity, the degradation of water quality with each successive use may render accessible fresh water non-potable. Aside from limited supply of

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[49] Ibid. 8.
[50] Ibid. 11.
[51] Ibid. 11.
[52] POSTEL and WOLF, Op. Cit. 60.

fresh water, growth in population and development both increase demand for fresh water. With developments in international law tending towards the incorporation of access to potable fresh water as a fundamental human right, states are under increasing pressure to ensure that dwindling per capita supply meets growing demand for potable fresh water.

Chapter 2 Water Conflict

Section 2.1 Water & Conflict

With the total volume of renewable potable fresh water fixed and the global population growing rapidly, Cooley[53], Starr[54], and Gleick[55] each posited that competition over water would ultimately lead to interstate conflict. The public popularity of this idea has been buttressed by repeated assertions that "the wars of the twentieth century were fought over oil and the wars of the next century will concern water."[56] Indeed, United Nations Secretaries-General Bhutros Bhutros-Ghali, Kofi Annan, and Ban Ki-Moon have all iterated various forms of this dire prediction over the past twenty years. This narrative of military conflict over scarce water resources has developed its own brand name: water wars.

In Cooley's principle example[57], he claims that the 1967 Arab-Israeli war was hydro-strategically driven. This theory has been roundly criticized, however.[58] As a result of the 1967 war, Israel occupied the Golan Heights, thereby extending its control over the Hasbani, the Dan, and the Banias – the headwaters of River Jordan. Though control of these headwaters had been an objective of Zionist planners since the beginning of the 20th century,[59] no evidence has been uncovered to prove that Israel's strategic goal in 1967 was to expand control over water resources.[60,61] The hydro-strategic outcome appears to be nothing more than a happy accident for Israel, or at best a correlation between geographic features that are militarily and hydrologically significant. While Cooley[62] may not have made a conclusively strong case for outright water war, he did present several convincing reasons why water issues may challenge relations between states: the physical realities of water scarcity in the Middle East, the universal concerns of states facing water deficits, the

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[53] COOLEY, Op. Cit. 3-26.
[54] STARR, Op. Cit. 17-36.
[55] GLEICK, 'Water and Conflict: Fresh Water Resources and International Security', Op. Cit. 79-112.
[56] Ismail SERAGELDIN, 'Water Wars?', *World Policy Journal*, 29/25 (2009), p. 25.
[57] COOLEY, Op. Cit. 3-26.
[58] Munther J. HADDADIN, 'The War That Never Was', *The Brown Journal of World Affairs*, 9/2 (2003), p. 321-332.
[59] WOLF, Op. Cit. 19-22.
[60] HADDADIN, Op. Cit. 321.
[61] WOLF, Op. Cit. 72.
[62] COOLEY, Op. Cit. 3-26.

dependency of Middle Eastern States upon transboundary waters for survival, and the decades of conflict between Arabs and Israelis over access to and use of water resources.

Wider examinations of conflicts involving water have yielded numerous examples; however, in mining history for evidence, proponents of the water wars hypothesis have had considerable difficulty in identifying a single interstate war fought with water as the primary *casus belli*. The most recent interstate war fought explicitly over water resources was waged between the Umma and the Lagash in Mesopotamia in 2400 - 2500 BC.[63] In the intervening 4500 years, water has primarily been a means of attack or defense, or fought over as a strategic necessity during conflicts driven by other factors.[64]

Alternative views of the relationship between water scarcity and armed conflict exist. Homer-Dixon[65] presents five categories of violent conflict that may result from water scarcity: in addition to the common theme of interstate conflict, he discusses local disputes, ethnic clashes, civil strife, and North-South war. Of the five types of violent conflict, he theorizes that only ethnic clashes and civil strife are likely to occur.[66] The existence of a linkage between water scarcity and domestic conflict is not outlandish given recent history. Giordano et al. suggest that "while it would be simplistic to claim direct causality, water was undoubtedly an irritant exacerbating an already tenuous situation"[67] at the outset of the first Palestinian intifada in 1987. More explicitly, a 2007 UNEP report stated that a primary source of ethnic conflict in the Darfur region of the Sudan was water scarcity caused by climate change.[68]

The focus on violent conflict inherent in the water wars hypothesis and in linkages between domestic strife and water is a very narrowly focused approach. States, after all, exercise both

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[63] Peter H. GLEICK, Peter YOLLES, Haleh HATAMI, 'Water, War & Peace in the Middle East', *Environment*, 36/3 (1994), p. 10.
[64] Peter H. GLEICK, 'Water Conflict Chronology', *Pacific Institute* (web page) (2009) http://www.worldwater.org/conflict/list/, accessed 13 January 2013.
[65] Thomas F. HOMER-DIXON, *Environment, Scarcity, and Violence* (Princeton, NJ: Princeton University Press, 1999), p. 5.
[66] Ibid., 5.
[67] Meredith GIORDANO, Mark GIORDANO, Aaron WOLF, 'The geography of water conflict and cooperation: internal pressures and international manifestations', *The Geographical Journal*, 168/4 (2002), p. 293.
[68] UNITED NATIONS ENVIRONMENT PROGRAMME, Op. Cit. 68.

hard and soft power. Zeitoun and Warner[69] suggest that lack of war does not mean lack of conflict. Zeitoun's "framework for hydro-hegemony"[70] examines conflict over scarce water resources based upon Lukes[71] definition of power as constituted in three forms: material, bargaining, and ideational. Material power – both military and economic – is familiar to realists, and represents a plane of difference between those who tout water cooperation, addressed later, and water wars. States, however, may also deploy bargaining and ideational power, derived from social and cultural pressures more commonly associated with a constructivist approach. Zeitoun's[72] analysis of power relationships – hydro-hegemony – in the Israeli-Palestinian conflict indicated that ostensibly cooperative events, such as the 1994 signing of a peace treaty between Israel and Jordan or the establishment of the Palestinian Water Authority in the West Bank, were coercive in nature. The inequitable distribution of water, or the biased power over water development in the case of the Palestinian Water Authority, was the situation imposed by the basin hegemon, Israel. In this sense, water-driven conflict has existed even when interactions between the parties were non-violent in nature.

Cooley's interstate water wars hypothesis[73] and Homer-Dixon's domestic strife hypothesis[74] were both rooted in water scarcity, and applied water scarcity as the basis for predicting a not-so-distant dystopian future with violent conflict over scarce water resources. Zeitoun's[75] approach informs this discussion by introducing the notion that water conflict need not necessarily be synonymous with violence. Still, there are those who emphasize the tendency towards water cooperation over conflict.

Section 2.2 Water & Cooperation

Using Serageldin's logic,[76] one would expect that interstate water conflicts would have emerged in states where water demand exceeds the available renewable water resources. Curiously, despite numerous states in the Middle East – Israel, Jordan, Egypt, and the states of the Arabian Peninsula – having water footprints that exceed their sustainable water supply,

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[69] ZEITOUN and WARNER, Op. Cit. 435-460.
[70] Mark ZEITOUN, *Power and Water in the Middle East* (London, UK: I. B. Taurus & Co., 2008).
[71] Steven LUKES, cited in ZEITOUN, Op. Cit.
[72] ZEITOUN, Op. Cit.
[73] COOLEY, Op. Cit. 3-26.
[74] HOMER-DIXON, Op. Cit.
[75] ZEITOUN, Op. Cit.
[76] SERAGELDIN, Op. Cit. 25-31.

interstate water war in the Middle East has not erupted.[77] Instead of engaging in water wars, states of the Middle East are signing treaties and negotiating. Egypt is participating in the Nile Basin Initiative; Israel signed a treaty covering the sharing of the River Jordan with Jordan, while the Oslo II agreement established the Palestinian Water Authority; and Turkey and its downstream riparians have agreed to a minimum flow of 500 cms in the Euphrates River. While Zeitoun and Mirumachi[78] lead an increasingly vocal dissenting voice, the general consensus has been that "all conflict is 'bad' and that cooperation is inherently 'good.'"[79]

The Basins at Risk I[80] and Basins at Risk II[81] projects certainly provide a convincing argument that water cooperation is more likely than water conflict. Wolf et al.[82] cast an explicitly wide net in analyzing interstate water interactions. "We attempted to compile a dataset of every reported interaction between two or more nations, whether conflictive or cooperative, which involved water as a scarce and/or consumable resource or as a quantity to be managed – i.e. where water is the driver of the event."[83] Analysis of water-related interactions between states found that 67.1% of events were cooperative, 27.7% were conflictive, and 5.2% were neutral or insignificant.[84] The cooperative events covered water quantity, joint management, infrastructure, hydropower, water quality, technical cooperation, flood control, and other measures.[85] Conflictive events, on the other hand, stemmed almost entirely from issues of water quantity and infrastructure.[86]

Based on the results of the BAR I project, a dystopian future of water wars appears unlikely. "The entire basis of [BAR I] rests on the not unassailable assumption that we can tell something about the future by looking at the past."[87] In considering water wars and water cooperation, hydropolitics suffers from a peculiar dichotomy: some look forward and predict

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[77] CHAPAGAIN and HOEKSTRA, Op. Cit. 66-67.
[78] Mark ZEITOUN, Naho MIRUMACHI, 'Transboundary water interactions I: reconsidering conflict and cooperation', *International Environmental Agreements*, 8 (2008), p. 297-316.
[79] Ibid., 302.
[80] WOLF, YOFFE, and GIORDANO, Op. Cit. 29-60.
[81] YOFFE, FISKE, GIORDANO et al., Op. Cit.
[82] WOLF, YOFFE, and GIORDANO, Op. Cit. 29-60.
[83] Ibid., 32.
[84] Ibid., 39.
[85] Ibid., 42.
[86] Ibid., 42.
[87] Ibid., 48.

interstate conflict over transboundary waters based on competition over diminishing per capita fresh water resources, while others look back and predict that interstate water conflict is unlikely in the future because it has not occurred in the past. Neither formulation is without faults. While water wars have not emerged and are not supported by evidence, the analysis leading to a focus upon water cooperation also suffers from a number of critiques.

First, the overwhelming majority of cases of acute conflict catalogued, 30 of 37, involved Israel prior to 1970.[88] The subtextual argument is that violent water conflict is even less likely than the data otherwise show because of one outlier. An alternative interpretation, however, would note that substantial violent interstate water conflict can occur if only one state decides that the political and military calculus are acceptable. That such conflicts ceased in 1970 may be as much the result of Israel establishing hegemony over its co-riparians as evidence that conflict ceased to occur. Second, the tendency to classify any treaty as a cooperative interaction ignores the dynamic political struggles of the parties to those treaties and the circumstances under which each was signed. Selby describes the "Joint Water Committee's licensing procedure for water projects inside Palestine" as "domination dressed up as cooperation."[89] Third, Bernauer et al.,[90] in completing a similar analysis to BAR I, tracked the rating of events by multiple reviewers. Subjectivity was an issue, albeit inconsistently. Accord between the reviewers ranged from 'fair' to 'excellent'.[91] Fourth, and most relevant to a direct comparison of the two narratives of water cooperation and water wars, the basis of the argumentation differs in one critical element: Wolf et al.[92] considered all events, not just those strictly associated with water scarcity, while the water wars narrative focuses exclusively on water scarcity.

Irrespective of its flaws, the BAR I project clearly illustrated the numerical dominance of cooperation over instances of conflict concerning water. Causality, however, remained unexplained:

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[88] Ibid., 39.
[89] Jan SELBY, cited in ZEITOUN and MIRUMACHI, Op. Cit. 306.
[90] Thomas BERNAUER, Tobias BÖHMELT, Halvard BUHAUG et al., 'Interstate Water-Related Conflict and Cooperation: A New Event Dataset' *Climate Change, Hydro-conflicts and Human Security Working Paper*, 2 (2011).
http://environmentalconflicts.com/index.php?option=com_docman&task=doc_download&gid=159&Itemid=138, accessed 6 February 2013.
[91] BERNAUER, BÖHMELT, BUHAUG et al., Op. Cit. 19.
[92] WOLF, YOFFE, and GIORDANO, Op. Cit. 29-60.

> "Many of the factors traditionally considered to be relevant indicators of international conflict, and of water conflict in particular, showed no statistically significant association with international water conflict or cooperation. Neither spatial proximity, average climate, basin water stress, government type, relative power, dams, nor dependence on freshwater resources for agriculture or energy showed a significant association with conflict over international freshwater resources. The factors that did show a slight association with conflict over freshwater resources included high population density, low per capita [Gross Domestic Product], and overall unfriendly relations between countries. None of these indicators, however, explained more than a small percentage of the variability in the data."[93]

That the indicators investigated could explain neither conflict nor cooperation is highly intriguing. The occurrence of conflict or cooperation could be entirely random; the determining factor may not have been analyzed; the wide range of events analyzed may have masked correlations between particular types of events and their causes; or, the basin-wide scale of the BAR I project may have missed indicators "which can only be identified in an examination of the systems at a finer scale than that utilized in BAR I."[94]

Section 2.3 Conclusion

Water wars or water cooperation represent the two ends of a potentially false continuum through which academic literature on water and conflict has swung.[95] Despite the not inconsiderable debate and analysis taken on the subject, large-n studies have failed to identify the factors that correlate to either conflict or cooperation over scarce water resources. While it is conceivable that the wrong indicators have been explored, it is equally plausible that the events under consideration have been too diverse, lacking a genuine connection in part through the poor definition of what constitutes water scarcity. The following section will present current conceptions of water scarcity, as well as propose a refinement from a general definition of water scarcity to an examination of water scarcity as an acute realized phenomenon. In essence, before we can identify the links between water scarcity and water

[93] YOFFE, FISKE, GIORDANO et al., Op. Cit. 8.
[94] Ibid., 9.
[95] ZEITOUN and MIRUMACHI, Op. Cit. 297-316.

conflict, we must clarify the definition of water scarcity so as to identify what interstate events are, and are not, associated with water scarcity.

Chapter 3 Water Scarcity

While water is clearly a scarce resource crucial to the proper functioning of the ecosystem and to human life, the concept of water scarcity remains difficult to define. Few attempts have been made to apply formal definitions to the concept, and much of the academic literature on water scarcity[96,97,98,99] fails to provide a standard definition despite the centrality of the concept to the analysis. This section briefly examines water scarcity, its implications at various levels of analysis, and several common metrics that may help us understand where fresh water scarcity is realized.

Section 3.1 What is Water Scarcity?

Water scarcity, the concept underlying nearly all water conflict analysis, is an elusive term. While the term itself is widely used, attempts at providing a comprehensive definition are rare and even more rarely successful. United Nations Water defines 'water scarcity' as:

> "The point at which the aggregate impact of all users impinges on the supply or quality of water under prevailing institutional arrangements to the extent that the demand by all sectors, including the environment, cannot be satisfied fully."[100]

Unfortunately, such a definition does little to clarify the concept of water scarcity beyond outlining a basic intuitive understanding. In such a framework the reliance upon terms such as 'impinges', or upon an aggregation of many interactions, renders the entire definition subjective. Must demand exceed supply outright, or is water still scarce even when demand does not exceed supply outright? Additionally, must all of the aggregated users, the majority, or a single individual experience a supply shortage in order to meet the threshold requirements of the UN definition?

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[96] FALKENMARK, Op. Cit. 112-118.
[97] POSTEL, Op. Cit.
[98] WOLF, YOFFE, and GIORDANO, Op. Cit. 29-60.
[99] GLEICK, 'Water and Conflict: Fresh Water Resources and International Security', Op. Cit. 79-112.
[100] UNITED NATIONS WATER SCARCITY INITIATIVE, 'Coping with Water Scarcity: A strategic issue and priority for system-wide action', *UN-Water Documents*, (2006), p.2 http://www.unwater.org/downloads/waterscarcity.pdf, accessed 12 February 2013.

The intuitive understanding of water scarcity may be better understood through a negative definition. Indeed, it is usually clear when water is abundant, but substantially less clear as to exactly when water scarcity exists. In this vein, if all parties have their water supply needs met, then water scarcity does not exist. The logical contrapositive of this statement is: if water scarcity exists, then all parties are not having their water supply needs met. This exercise implies that the occurrence of water scarcity is dictated by the first individual, or subset of the level of analysis under consideration, whose water supply needs are not met. In essence, water scarcity impacts a state when any one of its major water users – agricultural, industrial, or municipal – finds that demand cannot be satisfied.

With an improved, albeit basic, understanding of water scarcity, questions remain about what water scarcity means at different levels of analysis and how one identifies water scarcity at the state level.

Section 3.2 Levels of Analysis

To further understand water scarcity, we need to take the definition out of the abstract and apply it to the real world on three levels of analysis: individual, sub-state, and state.

As with food security, socio-economic factors play an important role in determining whether an individual experiences water scarcity. For the poor individual, economic realities tend to prevent access to falling groundwater tables or to purchases of potable fresh water in commercial settings. In Yemen, groundwater tables are falling at the rate of two to six meters per year,[101] resulting in many shallow wells running dry. Only wealthy Yemenis can afford to pay for their wells to be deepened in order to assure their continued access to potable fresh water. Such realities concentrate access to fresh water in the hands of a few individuals, while the majority is forced either to purchase potable water at exorbitant prices or to find alternative – and potentially unsafe – water sources. For an individual on the low wrung of the societal ladder, social status could result in access to fresh water being denied altogether or to it being prioritized in favor of those in a more favorable caste or social position. Traditional water sharing arrangements in the Arabian Peninsula prioritized access to the

[101] FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, 'Irrigation in the Middle East region in figures' *FAO Water Reports*, 34 (2009), p, 395, ftp://ftp.fao.org/docrep/fao/012/i0936e/i0936e00.pdf, accessed 13 March 2013.

most powerful families or tribes. In the Palestinian Occupied Territories, Israeli control over new well permits has forced many Palestinians to buy water from Israeli settlements at high prices, even though Israel subsidizes water costs for the settlements.

At a sub-national level, water scarcity can be the result of policy at the state level, a lack of investment in infrastructure, drought or diversion of water. The Marsh Arabs inhabiting the (former) wetlands of southeastern Iraq were the targets of aggression by Saddam Hussein's regime. Indeed, Saddam diverted the Tigris River into the Euphrates River upstream from the marshes in part to punish and destroy the Marsh Arabs. Today, despite the ouster of Saddam Hussein in 2003, the Marsh Arabs continue to face an existential threat because of drought and reductions in flow resultant from Turkey's GAP project.

When considering the level of states, water scarcity can be caused by a combination of hydrologic and economic factors. A drought clearly adversely impacts access to water in a given state by drastically reducing the quantity of water available for distribution. Similarly, in instances where a state is reliant upon a transboundary waterway for its water supply, upstream development projects may drastically reduce the availability of water for distribution. However, even with an outright deficit of precipitation or fresh water supply, the state enjoys the potential to adjust its policy and the economy to meet reality. If water scarcity threatens municipal water supply, the state hypothetically enjoys the ability to reallocate domestic water away from agriculture while meeting its food security needs through purchases of food on international markets. Because of their flexibility and autonomy, states can only really experience water scarcity through a combination of events. The combination of a rapid reduction in water supply, usually drought, and inability to import sufficient food are the primary factors. Conflict, however, may require that the state also be dependent upon transboundary waters that have been developed by upstream riparians.

0 and Chapter 5 will present an analysis of interactions between states sharing the Tigris-Euphrates River basin. The level of analysis presented herein is, accordingly, the state.

Section 3.3 Water Scarcity Metrics

Even when one focuses upon the state level of analysis, water scarcity is hardly an unambiguous concept. Hydrology, water and food policy, population growth, environmental

concerns, economics, and politics all play an important role in whether a state is classified as suffering from water scarcity. In turn, the classification of states in various categories of water scarcity forms the basis of prioritization of targeted development aid. Numerous metrics have been proposed as a means to determine which states are subject to water scarcity and to what degree. It is important to note, however, that each of the metrics presented have built-in assumptions that impact how they may be applied in an analysis of links between water scarcity and water conflict.

Section 3.3.1 Falkenmark's Water Stress Index

The most widely referenced water scarcity indicator, and one of the earliest introduced, is Falkenmark's[102] water stress index, or WSI, shown in Table 4. Falkenmark's water stress index uses four classifications, ranging from 'no stress' to 'absolute scarcity' to convey the degree to which mean annual runoff (MAR) per capita is sufficient to meet the water usage needs of citizens:

$$WSI = \frac{MAR}{Population}$$

The thresholds between the four classifications were developed through surveys of water users in several countries.[103] Table 4 presents the four classifications and the associated ranges of mean annual runoff per capita associated with each.

[102] FALKENMARK, Op. Cit. 112-118.
[103] Amber BROWN, Marty D. MATLOCK, 'A Review of Water Scarcity Indices and Methodologies', *The Sustainability Consortium Whitepapers*, 106 (2011), 19p. http://www.sustainabilityconsortium.org/wp-content/themes/sustainability/assets/pdf/whitepapers/2011_Brown_Matlock_Water-Availability-Assessment-Indices-and-Methodologies-Lit-Review.pdf, accessed 3 November 2013.

Table 4: Falkenmark's Water Stress Index[104]

Mean Annual Runoff Per Capita (m^3 per capita)	Classification
> 1700	No Stress
1000 - 1700	Stress
500 - 1000	Scarcity
< 500	Absolute Scarcity

Falkenmark's water stress index highlights the role that population plays in the classification of water scarcity. As the population of a state approaches zero, regardless of its fresh water endowment, the WSI approaches infinity. Conversely, states with a greater mean annual runoff are considered to suffer less from water scarcity.

Why does the major split between 'stress' and 'scarcity' occur at 1000 m^3 per year? Gleick proposes a total of 50 L per capita per day to meet basic needs for drinking water, sanitation, bathing, and food preparation.[105] This relatively modest total – equating to roughly 18 m^3 per capita per year – bears no relation to the benchmark indicator of 1000 m^3 per capita per year referenced by Falkenmark[106] and Gleick.[107] The answer lies not in water but in food. On a globally averaged basis, 1000 m^3 of runoff equates to the approximate volume of water necessary to grow enough cereals – roughly one metric ton – to feed one person for one year. Such a metric applied blindly to the MENA region ignores the significantly higher rates of evapotranspiration that affect the volume of water, typically exceeding 3000 m^3 per ton, necessary to bring cereal crops to full maturity.[108] A Middle Eastern state could thus be classified as facing 'no stress' while receiving insufficient runoff to be self-sufficient from a food security perspective.

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[104] BROWN and MATLOCK, Op. Cit.
[105] Peter H. GLEICK, 'Water in Crisis: Paths to Sustainable Water Use', *Ecological Applications*, 8/3 (1998), p. 575.
[106] FALKENMARK, Op. Cit. 112-118.
[107] GLEICK, 'Water and Conflict: Fresh Water Resources and International Security', Op. Cit. 101.
[108] CHAPAGAIN and HOEKSTRA, Op. Cit. 64.

Falkenmark's WSI also does not account for temporal distribution of runoff, the majority of which occurs during large floods outside of the growing season. As agricultural needs account for the bulk of the required 1000 m^3, and these needs are focused during particular months, an annual runoff tally may not give sufficient resolution to assess whether water needs are being met.

In addition to the spatial and temporal biases in the classification, the metric also fails to account for environmental needs, which encompass many varying water requirements on which the ecosystem's flora and fauna depend. Maintaining water quality is one such need. As an example, the salt content – measured as Total Dissolved Solids (TDS) – in the Euphrates River in Iraq has risen sharply, from 1080 ppm in 1979 to 4500 ppm in 2001.[109] Both values are considerably higher than the 500 ppm limit for TDS in drinking water suggested by the United States Environmental Protection.[110] While Iraq may have a sufficient volume of water to avoid being classified as water-scarce, the available water may not in fact be suitable for all uses or sectors.

While in each instance described, the metric may be skewed towards understating the degree of water scarcity, it also ignores some major mitigating factors. Falkenmark's WSI, for example, fails to account for man-made water. Thus, small Middle Eastern states, such as Bahrain, Qatar, Kuwait, and the United Arab Emirates, which produce the majority of their fresh water supply from desalination, are still classified as facing absolute scarcity. The Falkenmark WSI is "an early warning to countries heading toward chronic water scarcity."[111] In essence, the Falkenmark WSI is relevant to development planning exercises. When applying the WSI for purposes of political analysis, an in-depth contextual analysis would be necessary to identify whether water scarcity existed at a particular point in time.

Based solely upon the Falkenmark WSI, Iraq and Syria face water scarcity; Turkey, on the other hand, does not.

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[109] RAHI and HALIHAN, Op. Cit.
[110] ENVIRONMENTAL PROTECTION AGENCY, 'National Primary Drinking Water Regulations 816-F-09-004' (2009), http://water.epa.gov/drink/contaminants/upload/mcl-2.pdf, accessed 17 February 2013.
[111] FALKENMARK, Op. Cit. 114.

Section 3.3.2 Smakhtin Water Stress Indicator

The Smakhtin Water Stress Indicator brings environmental water demand directly into the discussion of water scarcity.[112] In Smakhtin's WSI, human water withdrawals equate to fresh water demand, while the difference between the mean annual runoff (MAR) and the environmental water requirements (EWR) equates to fresh water supply. Accounting directly for environmental water requirements directly reduces the volume of water available for human consumption. The totality of human water demand is thus compared to the net water available after accounting for environmental needs:

$$WSI = \frac{Withdrawals}{MAR - EWR}$$

As Smakhtin's WSI increases towards unity, human water consumption approaches the point at which human water use directly reduces water available to the environment.

Table 5 presents the four major classifications based upon WSI, varying from 'slightly exploited' to 'over-exploited'.

Table 5: Smakhtin's Water Stress Index[113]

Water Stress Indicator	Classification
$WSI > 1$	Over-Exploited
$0.6 \leq WSI \leq 1$	Heavily Exploited
$0.3 \leq WSI < 0.6$	Moderately Exploited
$WSI < 0.3$	Slightly Exploited

[112] Vladimir SMAKHTIN, Carmen REVENGA, Petra DÖLL, 'Taking into Account Environmental Water Requirements in Global-scale Water Resource Assessments', *International Water Management Institute, Comprehensive Assessment of Water Management in Agriculture Research Reports*, 2 (2004), http://www.iwmi.cgiar.org/assessment/FILES/pdf/publications/ResearchReports/CARR2.pdf, accessed 21 February 2013.
[113] SMAKHTIN, REVENGA, and DÖLL, Op. Cit. 10.

Inclusion of environmental water requirements directly into a human water scarcity indicator starkly outlines the problem of over-extraction: human water requirements can be tied directly to degradation of natural ecosystems upon which humans depend for other vital resources. The Marsh Arabs of eastern Iraq have suffered due to decreased flow in the Euphrates River. Reduction in flow has adversely impacted fisheries, decreased water quality, and destroyed habitat for humans, as well as for other fauna and flora.

The incorporation of environmental water requirements directly reduces the volume of fresh water that is available for human consumption. When considered alongside Falkenmark's WSI,[114] it is evident that simply considering human demand and mean annual runoff is an inadequate approach to determining which states are subject to water scarcity.

Section 3.3.3 Economic Water Scarcity

In additional to human and environmental considerations, a highly practical approach to water scarcity must address the problems of access and control to mean annual runoff. A state with a high per capita mean annual runoff, even when accounting for environmental requirements, might not be able to capture, to store, or to distribute said fresh water.

In some cases, the root causes for a state's incapacity to distribute sufficient water are conflict-related. Iraqi water infrastructure was targeted by the United States in 2003, and water infrastructure in fragile states like the Democratic Republic of Congo is largely non-existent regardless of fresh water endowment.

In other situations, economic considerations could prevent a state from distributing adequate water. For developing nations, some of the very earliest public works projects undertaken are associated with water and sanitation. Such projects are infrastructure-intensive, technical, and, above all, expensive. It is through this economic barrier – inability to construct infrastructure because of cost – that an otherwise water abundant nation may suffer from water scarcity.[115] Incorporating Seckler's economic constraint on top of Smakhtin's environmental requirement further increases the likelihood that a state may face water scarcity.

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[114] FALKENMARK, Op. Cit. 112-118.
[115] SECKLER, MOLDEN, and BARKER, Op. Cit.

Section 3.3.4 Gleick's Water Resources Vulnerability

Gleick[116] looked beyond developing a single water scarcity metric to identify four conditions under which water scarcity might leave states in a vulnerable position with regards to water security. According to Gleick, "water resources vulnerability is a function of many things, including economic and political conditions, water availability, and the extent to which a source of water supply is shared."[117]

In much the same vein as Falkenmark[118], Gleick[119] compares water demand to renewable water supply on a country-by-country basis, finding that with few exceptions the nations that consume more than 30% of their renewable water supply lie within the MENA region.

Moreover, Gleick identified countries where per capita annual water availability fell below the 1000 m^3 metric in 1990 and where it is expected to fall below 1000 m^3 by 2025, thus explicitly incorporating the notion that population growth over time will impact the extent to which a state suffers from water scarcity. A preponderance of the states listed is located within the MENA region. Interestingly, however, none of Iraq, Syria, or Turkey falls into this category.

A third condition proposed by Gleick[120] was the degree to which a nation finds its "total water supply originating outside of their borders and under the control of other nations."[121] Not surprisingly, the downstream co-riparians of the Tigris-Euphrates River basin, Iraq and Syria, are listed. Iraq derives 66% of its water from outside its borders, while Syria, located downstream from mountainous regions of Turkey, derives nearly 77% of its total water supply from outside its borders.[122] Relying upon transboundary water flows for the overwhelming majority of fresh water supply creates the potential for the securitization of water, and particularly for conflict over the allocation of water among co-riparians. Considering that water demand in Iraq and Syria will approach or exceed their respective

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[116] GLEICK, 'Water and Conflict: Fresh Water Resources and International Security', Op. Cit. 79-112.
[117] Ibid., 99.
[118] FALKENMARK, Op. Cit. 112-118.
[119] GLEICK, 'Water and Conflict: Fresh Water Resources and International Security', Op. Cit. 79-112.
[120] Ibid., 79-112.
[121] Ibid., 102.
[122] Ibid., 79-112.

mean annual runoff by 2025,[123] competition over the allocation of the Tigris-Euphrates River system is likely to become more intense over time. "When the Turkish projects are complete, the flow of the Euphrates River to Syria could be reduced by up to 40 percent, and to Iraq by up to 80 percent."[124] As we shall see, relations between the Euphrates River co-riparians have at times already been severely strained over the allocation of scarce water resources.

A fourth condition proposed by Gleick[125], dependence upon hydro-electricity, finally draws the sole water-abundant riparian in the Tigris-Euphrates River basin, Turkey, into a security dilemma. The Turkish Southeastern Anatolia Project – better known by its Turkish acronym, GAP (Güneydoğu Anadolu Projesi) – calls for the construction of 22 dams and 19 hydropower stations on the Tigris and Euphrates Rivers.[126] In 2005, the hydropower dams constructed under the GAP – Karakaya, Atatürk, Batman, Kralkizi, Dicle, Birecik, and Karkamis – provided 18.7 billion kilowatt-hours of electricity, representing 47.7 percent of Turkey's total hydropower output for the year.[127] While the GAP hydropower does not account for a particularly substantial percentage of total electricity production in Turkey, its function as a multi-purpose development project aimed at quelling Kurdish separatist movements in the region amplifies the importance of the GAP for Turkey.

While the first two conditions directly measure water scarcity as a function of water supply and demand, the final two suggest that a state need not necessarily be water scarce to be vulnerable to water security issues. Such vulnerability may result in states securitizing water resources in a manner that decreases the willingness of co-riparians to share information and increases the likelihood of conflict. While none of the major Euphrates River riparians are technically water scarce according to Gleick,[128] all are vulnerable to water security issues to some degree. Indeed, the dynamic of Turkey's reliance upon hydropower, while downstream riparians are dependent upon runoff from Turkey, suggests that Turkish domestic policy and the GAP project will remain vitally important to water security in Iraq and Syria.

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[123] SECKLER, MOLDEN, and BARKER, Op. Cit. 14.
[124] GLEICK, 'Water and Conflict: Fresh Water Resources and International Security', Op. Cit. 89.
[125] Ibid., 79-112.
[126] John F. KOLARS, William A. MITCHELL, *The Euphrates River and the Southeast Anatolia Development Project* (Carbondale, IL: Southern Illinois University Press, 1991), 324p.
[127] REPUBLIC OF TURKEY, 'Latest Situation on Southeastern Anatolia Project: Activities of the GAP Administration' (2006) p. 3, http://includes.gap.gov.tr/files/ek-dosyalar_en/about-gap/latest-situation.pdf, accessed 21 February 2013.
[128] GLEICK, 'Water and Conflict: Fresh Water Resources and International Security', Op. Cit. 79-112.

Section 3.4 Virtual Water

The formulations of water scarcity presented above are concerned with baseline indicators that may indicate systemic water deficits over time. Yet Yoffe et al.[129] identified only minor correlation between water conflict or cooperation and population density or GDP, and virtually no correlation with average climate or presence of dams. The lack of correlation between average climate conditions in a watershed and water conflict provides an important clue: most analysis considers only intra-basin conditions. This narrow focus is, however, in dire need of change to incorporate inter-basin flows of water. This section incorporates Allan's[130] 'virtual water' or 'water-food-trade nexus' into our growing conception of water scarcity.

As a physical commodity, water is heavy, bulky, and incompressible. In order to overcome such physical realities and to transport large quantities of water between watersheds, a state must either expend large quantities of money and energy or must find some way to overcome the incompressibility of water. The means to overcome the incompressibility of water lies in trading products that include water as a significant factor input. Iraq need not import 3000 m^3 of water for use in growing one ton of wheat domestically when Iraq can simply import the wheat, which has a volume of approximately 1 m^3. Trade in the agricultural commodity, in this case wheat, essentially compresses water by a factor of 3000. Thus, a state that is not food self-sufficient because of a water deficit may, through trade, become food secure.[131]

Developing economies typically allocate 80-90% of all water supplies to agriculture, with the remaining 10-20% supplying the demand of industrial and municipal sectors. As population growth or the climatic condition threatens to exceed water supply, the state can hypothetically – through domestic policy – reallocate relatively minor quantities of agricultural water to affect comparatively large increases in supply for industrial or municipal sectors. The lost agricultural production is then replaced by purchasing food on international

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[129] YOFFE, FISKE, GIORDANO et al., Op. Cit. 8.
[130] ALLAN, Op. Cit.
[131] Clemens BREISINGER, Teunis VAN RHEENEN, Claudia RINGLER, et al., 'Food Security and Economic Development in the Middle East and North Africa: Current State and Future Perspectives', *International Food Policy Research Institute*, 00985 (2010), p. 4, http://www.ifpri.org/sites/default/files/publications/ifpridp00985.pdf, accessed 17 February 2013.

markets. Hoekstra and Hung[132] demonstrate that the states in the MENA import staple foods from North American and European markets, where temperate climatic conditions are substantially better suited for mass production of agricultural products.

It is the ability to meet domestic water demand through external trade that masks the correlation of seemingly rational indicators with water conflict. That trade is preferable to inter-state conflict or domestic upheaval is, hopefully, taken as evident. Virtual water allows us to understand why water conflict has not emerged despite the general proclamation of Middle Eastern water scarcity in concordance with the metrics presented. Virtual water amplifies the flexibility of the state.

Section 3.5 Water Scarcity in a Global Marketplace

Since "the Middle East as a region ran out of water in the 1970s,"[133] the politically expedient solution has been to increase agricultural imports while reallocating domestically available fresh water away from the agricultural sector. Such an approach attaches water scarcity at the state level directly to global trade in agricultural commodities produced elsewhere. Hoekstra and Hung[134] demonstrate that 40.6% of Middle Eastern virtual water imports are generated in North America, with staples – wheat, soybean, rice, maize – comprising the overwhelming majority of virtual water trade.

The states supplying food to the Middle East have historically had sufficient water and land to meet domestic needs as well for export. As such, the dependency of Middle Eastern states on foreign agricultural production has seldom been a significant concern. Figure 1, however, demonstrates that starting in 1972 periodic food crises began to erupt on a global scale. The 1972-1974 food crisis emerged from the confluence of a number of factors. First, "the U.S. government – as well as the Australian and Canadian governments, who also stored large stocks of wheat – took steps to drastically reduce the production of wheat by one-third from mid-1970 to mid-1972."[135] Second, demand shocks from trade liberalization with China, Eastern Europe, and the USSR lead to the purchase of "about half of U.S. carryover stocks of

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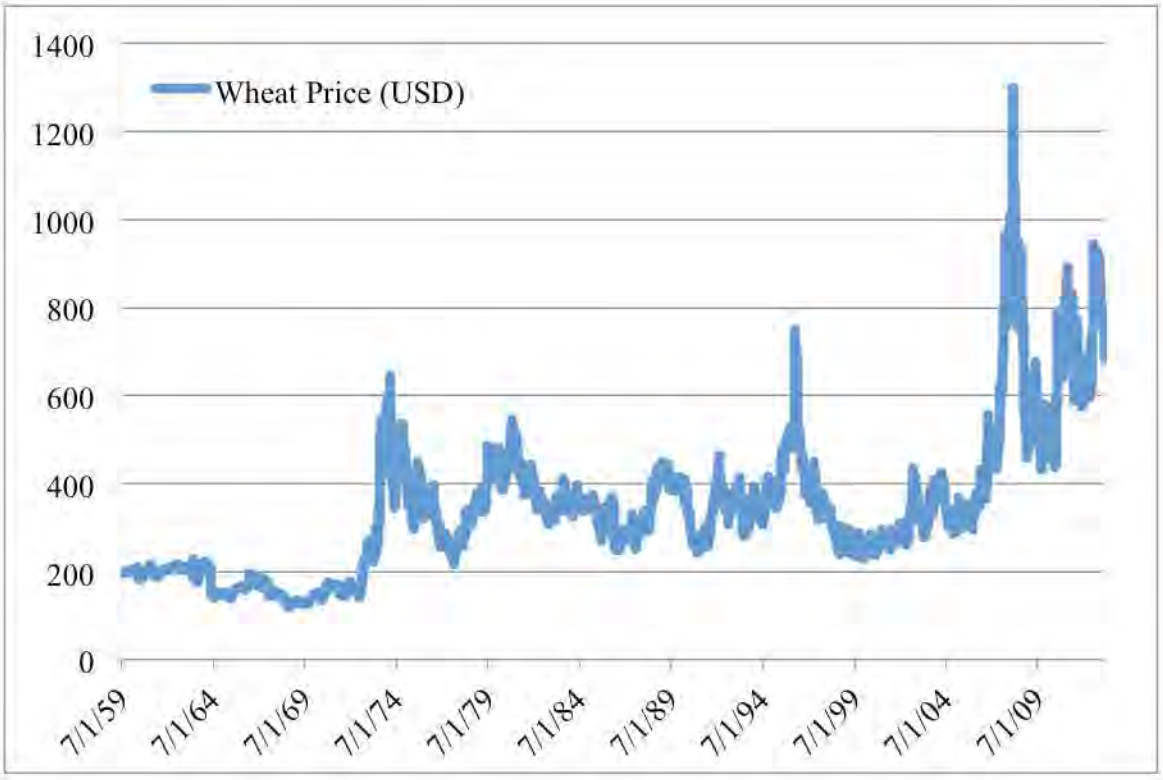
[132] HOEKSTRA and HUNG, Op. Cit.
[133] ALLAN, Op. Cit. 5.
[134] HOEKSTRA and HUNG, Op. Cit. 34-37.
[135] HEADEY and FAN, Op. Cit. 82.

July 1, 1972, and more than one-quarter of 1972 production."[136] Third, supply shocks lead "to a 3 percent decline in world grain production in 1972, and 1974 also produced poor grain harvests, especially in Canada and the United States."[137] Finally, increases in oil prices, a direct result of the 17 October 1973 OPEC oil embargo, were "directly transmitted to rising food prices in the United States… and these elevated prices were then transmitted to other markets because of North America's vital role in the grains trade."[138]

Figure 1: Wheat Prices 1959 - 2013[139]



Wheat prices increased by 62% in 1972, 113% in 1973, and increased over the first two months of 1974 by 15% to reach a peak price of $645 USD per ton.[140] At the peak, the overall increase in wheat prices over historical norms was 275%. Despite declining following the peak, wheat prices remained more than 72% above pre-crisis norms throughout 1975.

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[136] Ibid., 85.
[137] Ibid., 85.
[138] Ibid., 87.
[139] CHICAGO BOARD OF TRADE 'CBOT Wheat Futures, Continuous Contract #1 (W1) (Front Month)', Quandl (web page) (2013) http://www.quandl.com/OFDP-Open-Financial-Data-Project/FUTURE_W1-CBOT-Wheat-Futures-Continuous-Contract-1-W1-Front-Month, accessed 19 March 2013.
[140] Ibid.

While wheat prices declined until 1977, prices never attained pre-crisis levels. A similar crisis unfolded in 2007-2008, and prices show no signs of returning to pre-crisis norms.

In a state without substantial food reserves and reliant upon cereal imports, an increase in the internationally traded cereal prices directly correlates to domestic price increases. In developing nations where as much as 70% of household income can be directed towards purchasing food, a substantial increase in food prices directly correlates to a decrease in the quantity of food purchased per household.[141] It is this mechanism, whereby consumers cannot afford to purchase sufficient food, which unleashes social unrest and motivates government action during periods of global food spikes.

Section 3.6 Realized Water Scarcity

If trade in virtual water is used by states to mitigate water deficits, then it is only when the virtual water system fails – conceptualized here as global food crises, shown as sustained wheat price increases in Figure 1 – that one should observe a correlation between overt water conflict and the factors classically associated with water scarcity. In essence, realized water scarcity is rare, requiring simultaneously that:

1. Systemic factors (measured using water stress indexes) or periodic factors (drought, dam construction, and political conditions) disrupt the supply of water within a basin or state, and
2. Global food crises disrupt the supply of virtual water.

It is during these brief, albeit increasingly frequent, periods that one may see the water conflict boil to the surface of international relations. This is particularly true for states reliant upon transboundary waters for a substantial portion of their water supply.[142]

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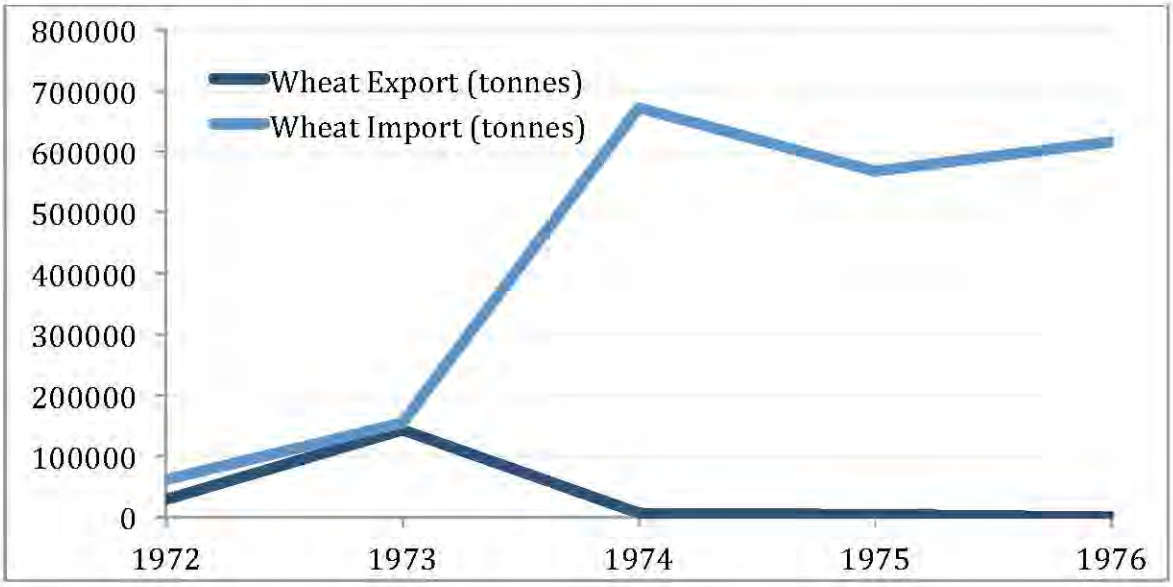
[141] FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, 'How does international price volatility affect domestic economies and food security?', *The State of Food Security in the World*, 12(2011), p. 14, http://www.fao.org/publications/sofi-2011/en/, accessed 10 March 2013.
[142] GLEICK, 'Water and Conflict: Fresh Water Resources and International Security', Op. Cit. 99-102.

Section 3.7 Realized Scarcity and the 1975 Euphrates River Crisis

In Iraq, the disaster of the global food crisis of 1972-74 was matched only by the near complete failure of domestic wheat production over the same period. Iraq had a poor growing season in winter 1973-74 and estimated a loss, associated with drought, of nearly 70% of its domestic wheat harvest during the winter of 1974-75.[143] While the evidence supporting this claim is based upon Iraqi claims in a politically charged environment, more objective evidence provides support for Iraqi claims. Figure 2 illustrates that Iraqi wheat imports exploded, as exports disappeared entirely.[144] Moreover, the Euphrates River flow rates in upstream Syria over the period 1973-1975 were approximately half of flow rates for the years preceding and following the drought.[145]

Figure 2: Iraqi Wheat Imports and Exports 1972 - 76[146]



In addition to the combination of drought, crop failure, and a global food crisis, Iraq faced a degree of uncertainty over flows in the Euphrates River. Turkey completed the Keban dam in

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[143] 'INA reports statement', Baghdad, Iraqi News Agency, in FBIS-MEA-75-112 on 10 June 1975, accessed 22 January 2013.
[144] FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, 'Trade: Crops and Livestock products: Wheat', FAO (web page) (2013) http://faostat3.fao.org/home/index.html, accessed 19 March 2013.
[145] KOLARS and MITCHELL, Op. Cit. 97.
[146] FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, 'Trade: Crops and Livestock products: Wheat', Op. Cit.

1974 and Syria completed the Tabaqah dam in 1973. As both upstream riparians filled their dams and managed flows, it became virtually impossible for Iraq to distinguish between low flows caused by drought and low flows caused by dam operations upstream. The existence of dams upstream also provided Iraq the opportunity to internationalize its domestic crisis by blaming upstream countries for the low flows threatening 3.5 million Iraqi peasants. Iraq's relations with the Syrian Ba'athist regime, despite a détente following the 1973 October war, had been tense since 1966. On the basin level, tripartite talks between Iraq, Syria, and Turkey had failed since 1962 to deliver a multilateral or even bilateral agreement on the allocation of waters in the Tigris-Euphrates River basin.

In short, in the years preceding the 1975 Euphrates River crisis we observe many of the classic indicators of water conflict: a global food crisis, a regional drought, domestic crop failure, interstate political tension, population growth, and lack of a multilateral watershed agreement. The following chapters present an in-depth analysis of the 1975 Euphrates River crisis. Chapter 4 presents the political context, both international and regional, in which the conflict occurred. Chapter 5 presents a detailed account of the crisis, with particular attention to the different forms the conflict assumed as it unfolded.

Section 3.8 Conclusion

Water scarcity remains an ambiguously defined concept that is under constant revision. The enumeration of multiple factors impacting water scarcity has clearly demonstrated the difficulty in establishing any significant correlation between water scarcity and water conflict. As populations grow, environmental needs are accounted for, and economic feasibility of exploitation of water resources are addressed, the fraction of water available to meet human needs grows ever smaller. Additionally, even in instances where water demand does not exceed water supply, dependence upon transboundary water or hydroelectricity can lead to securitization of fresh water resources as if fresh water were scarce.

While the above factors in isolation might be predictive of water conflict, the ability of states to trade for agricultural goods can mitigate potential conflicts before they arise. It is most notably when a state is unable to mitigate its own domestic water deficit through trade in virtual water, as in the 1975 Euphrates River crisis, that we may see the effects of realized

water scarcity. In order to build an understanding of how water scarcity relates to "factors traditionally considered to be relevant indicators of international conflict, and of water conflict in particular,"[147] we must focus our study on these rare instances of realized water scarcity.

[147] YOFFE, FISKE, GIORDANO et al., Op. Cit. 8.

Chapter 4 The 1975 Euphrates River Crisis Political Context

Section 4.1 International Politics

Section 4.1.1 Colonialism and The Middle Eastern State System

The modern Middle Eastern state is an artifact of colonial power politics. With the notable exceptions of Turkey, Egypt, and Saudi Arabia, the state borders of most Arab states were delineated by colonial powers during the first half of the 20th century. The political legacy of colonialism forms the framework through which hydropolitics in the Tigris-Euphrates River basin unfolds. The borders delineated by colonial powers acting through trusteeship arrangements under the auspices of the League of Nations following the first World War utterly ignored the diverse ethnic geography of the former Ottoman Empire. The manufactured nature of the nascent Arab states left them vulnerable to penetration by supranational ideologies. The unconsolidated nature of the regimes contributed to political parity within the Tigris-Euphrates River basin, which in turn contributed to the conflict of the mid-1970s.

Post-colonial Iraq was and remains a divided nation. While 95% of Iraqis are Muslim, under Saddam Hussein a Sunni minority that comprises approximately 32-37% of the population ruled over a Shi'a majority representing 60-65% of the population.[148] "None of Iraq's pre-Ba'ath regimes found a viable state-building formula which could stabilize this centrifugal society."[149] Saddam Hussein, a Sunni, rose to power in Iraq through brutal suppression of the Shi'a majority and the Kurdish minority. An important ethnic divide in post-colonial Iraq witnessed an Arab majority suppressing the nationalist aspirations of a geographically concentrated Kurdish minority. The Kurds, despite a definitive geographic concentration, were divided between Turkey, Syria, Iran and Iraq when the Treaty of Sèvres was signed in 1920. After 1920, Britain followed a policy of divide-and-conquer and established minority

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[148] CENTRAL INTELLIGENCE AGENCY OF THE UNITED STATES OF AMERICA, 'CIA World Factbook: Iraq' CIA (web page) (2013) https://www.cia.gov/library/publications/the-world-factbook/geos/iz.html, accessed 11 February 2013.
[149] Raymond HINNEBUSCH, *The International Politics of the Middle East* (Manchester, UK: Manchester University Press, 2003), p. 206.

rule under King Faisal, a Sunni. Such colonial actions established systemic ethnically driven instability in Iraq.

Syria from its inception has been even more fragmented than Iraq. Partly, the ethnic fragmentation of Syrian society is the end result of migratory policy under the Ottoman Empire, which saw displaced, often persecuted, ethnic minorities relocated to *bilad al-sham* (Greater Syria). Ethnically, most Syrians are Arab, although minority groups include Armenians and Kurds. Syrian Sunnis represent 74% of the population, Muslim minority groups – mainly the Alawite and Druze sects of Shi'a Islam – 16%, Christians 10%, and Jews a small minority.[150] Hafiz Al-Assad came to power by building a coalition of the merchant class, a professional military, and an Alawite minority. The latter two, through purges in the military during the early 1970s, came to be synonymous. The regime's reliance upon an Alawite-dominated security apparatus for stability has developed into a demographic political nightmare: continued minority rule may be the only way to protect minority parties from reprisals by the Sunni majority. The demography of Syria has, thus, left the state open to attacks by external parties attempting to mobilize the marginalized Sunni majority against a minority regime.

While ethnic diversity was established and fostered in Syria under the Ottoman Empire, the colonial powers further ensured a sense of irredentism by artificially drawing Syrian borders. Loose central governance over broad territories under the Ottoman Empire had lead to identification with local power, primarily with tribal affiliations taking precedence in daily life. Even concepts like land ownership were poorly developed because in the Ottoman Empire the Sultan owned all land with a portion of any production being paid to the Sultan as rent. The division of *bilad al-sham* among Syria, Lebanon, Palestine, Transjordan, and Iraq represented a stark contrast with Ottoman governance. The sense among Arabs that states had been imposed upon an Arab People – ostensibly as a means to perpetuate colonial rule – left these nascent Arab states particularly vulnerable to penetration by supranational identities.

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[150] CENTRAL INTELLIGENCE AGENCY OF THE UNITED STATES OF AMERICA, 'CIA World Factbook: Syria' CIA (web page) (2013) https://www.cia.gov/library/publications/the-world-factbook/geos/sy.html, accessed 11 February 2013.

Contrary to the experience of the downstream riparians, Turkish ethnic identity was already strongly established at the formation of Turkey. The successful defense against European subjugation following World War I, combined with Mustafa Kamel Atatürk's Turkish nationalist program, entrenched the Turkish identity domestically in a way has never truly occurred in either Iraq or Syria. Even Turkey, however, plays host to substantial and important minority groups. The most prominent within modern Turkish politics is the Kurdish population that inhabits much of southeastern Turkey, including the headwaters of the Tigris-Euphrates River basin. The Kurdish people are present within the Tigris-Euphrates River basin within all four riparian states, including Iran. Iraq's relationship with its Kurdish population played important roles in the narratives exchanged by Iraq and Syria during the 1975 Euphrates River crisis.

Syria and Iraq did not escape European domination without significant demographic challenges. The societal fragmentation of Iraq and Syria left these populations open to penetration by supra-national Pan-Arab discourse or to closer association with tribal identities. Without a solid demographic basis or ethnic identity around which to form a ruling coalition, competition from supra-national and sub-national identities created conditions under which governing by popular consent was, and remains, all but impossible. Even if their personalities were dissimilar, the rulers of Syria and Iraq consolidated their regimes through fear and oppression, rather than through more democratic means to establishing regime legitimacy. Hafiz Al-Assad transformed the Syrian Air Force, and later the entire military establishment, into an Alawite fiefdom. Saddam Hussein relied upon the close cooperation of trusted political allies from Tikrit, as well as a ruthless secret police. The inter-factional conflict in Iraq after the 2003 US invasion and the uprisings in Syria starting in 2011 illustrate that societal schisms within these societies have continued to this day.

Turkish domestic politics in the 1970s were substantially more democratic than the domestic politics of its co-riparians; however, the Turkish state also struggled with consolidation. The military's constitutional obligation to protect the secularism of the state led it to intervene in domestic politics on four occasions: 1961, 1971, 1980, and 1997. The 1971 coup d'état by memorandum came amid rampant civil unrest and the rise of leftist and student movements. The elected government, lead by Prime Minister Suleyman Demirel, had been unable to address the societal woes brought on by a deep recession in the late 1960s. At the height of

civil unrest an explosive mix of Kurdish separatists, communists, right wing nationalists, labor unions, and student groups carried out mass demonstrations, kidnappings, and bombings. The coup by memorandum on March 12, 1971 permitted the Turkish military leadership to rule from the background. Civil liberties were curtailed, curfews established, political dissent harshly repressed, and special courts established to prosecute dissenters. While elections were held in 1973, the special courts continued operation through 1976. More recently, a military coup in 1980 was initiated because the domestic political process again proved unable to contain domestic strife.

The effects of colonialism in Iraq and Syria – or, in the case of Turkey, the lingering effects of fighting off colonial powers, which lead to the centrality of the Turkish military in Turkish domestic politics – clearly left each of the Euphrates riparian states with a fragmented society. These internal grievances impacted hydropolitics in the Tigris-Euphrates River basin in three important ways: non-democratic rule lead to a focus on domestic politics, soft states were open to ideological attacks, and political parity left open the question of interstate competition over water resources. We will consider each of these issues in turn.

First, divisions within society lead to non-democratic rule and a preoccupation with consolidation of power domestically rather than with external affairs. Within Iraq, Saddam Hussein rose to prominence as part of the Ba'ath July 17 Revolution, which overthrew Abdul Rahman Arif on 17 July 1968. In Syria, Hafiz al-Assad also ascended to power through military coup in 1966 and seized control of Syria in 1970. The fragmented Iraqi and Syrian societies required that the non-democratic leaders consolidate their hold on power and purge the ranks of political and military leadership. Within Turkey, political fragmentation, the rise of Leftist parties, and the inability of the government to maintain order resulted in a coup by the conservative Turkish military. The Turkish military, however, faced the problem of wearing two hats: domestic politics and protection against foreign threats. As with Iraq and Syrian, the Turkish military's focus on domestic politics in the early 1970s was a curb on the expression of military power externally.

Second, the lack of Syrian or Iraqi nationalism, the irredentist legacy of colonial division, and the wider discussion of pan-Arab ideology in the Middle East left Iraqi and Syrian society

fragmented by sub-national and supra-national identities.[151] Pan-Arabism, despite the rise of political Islam and despite frustration with the many failures to realize Arab unification, continued to determine the priorities of regional politics and to define the primary mode of inter-state conflict in the Arab world. Pan-Arab discourse clearly viewed Israel as the primary threat to the Arab people and provided a rallying point around which both Hussein and al-Assad attempted to build national identity.[152] Moreover, the marginalized political aspirations of the broader public left them receptive to accusations against their non-elected leadership on the grounds of pan-Arabism.

Third, political parity created an environment in which competition over water resources was attractive. The process of consolidation in post-colonial Syria and Iraq, as well as in Turkey, was ongoing. With each riparian facing division and internal strife, the early and mid-1970s represented a period during which the political hierarchy within the Tigris-Euphrates River basin was nebulous. According to Organski,[153] such conditions of uncertainty and parity often lead to conflict. The absence of an overall hegemon – politically, economically, or militarily – established conditions under which conflict was apt to occur.

Section 4.1.2 Independence and the Cold War

Turkey, Syria, and Iraq were all states with an ongoing political consolidation process at play in the mid-1970s. Syria and Iraq proceeded from post-colonial independence into a period of political upheaval heavily marked by coups, instability, and penetration by external actors. While Turkey managed to resist colonial powers at the outset and proceeded directly to independence, it also suffered from periodic political upheaval, particularly after the death of Atatürk. The threats faced, both domestically and externally, by the Tigris-Euphrates River basin riparians affected the political realities.

Turkey, which formally declared itself a republic on 19 October 1923, managed to achieve independence following the dissolution of the Ottoman Empire. While British influence remained entrenched - Britain had been providing significant funding to the Turkish

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[151] HINNEBUSCH, Op. Cit. 78.
[152] BARNETT, Op. Cit. 165-166.
[153] A. F. K. ORGANSKI, Jacek KUGLER, *The War Ledger* (Chicago, IL: The University of Chicago Press, 1980), p. 19.

government - post-War economics prevented a continuation of this policy in Turkey. Turkey found itself, suddenly, as a frontline state facing the growing Soviet bloc. On 12 March 1947, United States President Harry S. Truman presented the Truman Doctrine before a joint session of the United States Congress. President Truman recalled the "coercion and intimidation, in violation of the Yalta agreement, in Poland, Rumania, and Bulgaria" and then called upon "the United States to support free peoples who are resisting attempted subjugation by armed minorities or by outside pressures."[154] President Truman feared that "if Greece should fall under the control of an armed minority, the effect upon its neighbor, Turkey, would be immediate and serious. Confusion and disorder might well spread throughout the entire Middle East."[155] The United States promptly provided Turkey and Greece with $400 million USD in aid, thereby establishing a close alliance between Turkey and the United States. Despite wide condemnation of Turkish intervention in Cyprus in 1974, Turkey remained nominally in the US camp throughout the remainder of the Cold War. Courtesy of its alliance with an ally of Israel, Turkey was largely separated from its Arab neighbors by the foremost precept of Arab nationalism in the 1970s: Israel is the enemy.[156]

During the same period, Iraq and Syria both proceeded through difficult processes of throwing off the yoke of colonial domination.

Syria was granted independence from France on 17 April 1946 after a period of civil unrest that forced France to withdraw its troops from Syria. Power was immediately transferred to the republican government previously established under the French mandate; however, this government did not prove durable. A series of coups between 1949 and 1954 signaled the weakness of Syrian political institutions. Despite the relative chaos domestically, Syria was definitively a Soviet client state from the 1950s onwards:

> "Syria… had for some time maintained close political, military, economic and cultural relations with the USSR. It had been the first Arab country to purchase arms from the Soviet Union, late in 1954, and had been promised Soviet support in the

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[154] Harry S. TRUMAN, 'Address before a Joint Session of Congress', *Yale Law School, Lillian Goldman Law Library, The Avalon Project* (1947) http://avalon.law.yale.edu/20th_century/trudoc.asp, accessed 11 March 2013.
[155] Ibid.
[156] BARNETT, Op. Cit. 165-166.

> spring of 1955 when it was being subjected to pressure to join the Baghdad Pact. In June 1956, Soviet Foreign Minister Shepilov visited Syria where he held talks with the country's leaders on the subject of Soviet economic aid to Syria, including aid in development projects: Shepilov offered grain-storage facilities, and the construction of a railway from Latakia to Jazira, a well as of several air fields, and a Euphrates dam."[157]

Soviet involvement in the design and construction of the Tabaqah dam – often referred to as the Euphrates Dam – was crucial to the success of the project; it is both technically challenging and expensive to design and to construct a hydropower facility. Syria, a non-oil producing state, was thus dependent upon international aid to fund the project. Despite the 1956 Soviet commitment, the design and construction of the Tabaqah dam went through many phases, ultimately lasting seven years and requiring a $133 million USD (in 1966 USD) loan from the USSR.[158] For Syria, the Tabaqah dam was a pathway to economic development in the restive rural eastern regions of Syria and as a means to ensure the water supply for its growing urban centers in Damascus, Homs, and Aleppo. Foreign delegations and leaders visited the Tabaqah dam. For the Soviet Union, the Tabaqah dam represented a major technical achievement to counter the lure of American aid dollars. Accordingly, the Tabaqah dam was promoted internationally by the Soviets as a sign of commitment to its own client states.

Iraq's relationship with the Soviet Union was less a steady rapprochement than an transformation triggered by a coup in 1958. Iraq had achieved independence from Britain on October 3, 1932, with a Hashemite monarch, King Faisal, installed as head of state. Throughout the Hashemite rule, and in the face of substantial opposition by Arab nationalists in Egypt and Syria calling for an end to Western involvement in the Arab world, Iraq was aligned with Western forces, particularly Britain. British involvement in the Suez Crisis badly tarnished the Arab world's image of the Baghdad Pact (a security pact between Turkey, Iraq, Iran, Pakistan, and Great Britain) and lead to the meteoric rise of Gamel Abdel Nasser

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[157] Yaacov RO'I, *From Encroachment to Involvement: A Documentary Study of Soviet Policy in the Middle East, 1945-1973* (New York, NY: Halstead Press, 1974), p. 227.
[158] Monib EL-KHATIB, 'The Syrian Tabqa Dam: Its Development and Impact', *The Geographical Bulletin*, 26 (1984), p. 22.

as the undisputed leader of Arab nationalism.[159] Rising tensions between Nasser and Iraqi leadership, particularly Prime Minister Nuri al-Said, over continued Western involvement and the Baghdad Pact ultimately lead to the toppling of the Hashemite monarchy in Iraq. On July 14, 1958, Nuri al-Said and the entire Hashemite royal family were captured and killed in a bloody coup.[160] In the year that followed, new leadership in the Iraqi Ba'ath Party withdrew from the Baghdad Pact and over time realigned Iraq towards the Soviet Union.

The Iraqi relationship with its Soviet sponsor was not always so cordial as the Syrian-Soviet relationship. Iraqi repression of northern Kurdish populations was strongly condemned by the Soviets, in part due to the presence of a Kurdish population within the Soviet Union. On the other hand, "there were some little triumphs, perhaps most notably the nationalization of Iraqi oil in 1972, which had been undertaken with generous (and widely acknowledged) technical assistance from the Soviet Union. Although oil nationalization was wildly popular in Iraq, and added greatly to the cachet of the Ba'ath government, the lack of accountability meant that much of the proceeds of the nationalized oil went into the pockets of Saddam Hussein and his cronies, and was a major factor in enabling them to stay in power."[161]

As European power waned following World War II, and particularly following the Suez Canal crisis of 1956 and the Baghdad Pact, Soviet and American intervention replaced the discredited colonial order. The Cold War became increasingly a battle between the superpowers for geostrategic position and oil reserves in the Middle East. Despite the United States' close relationship with Saudi Arabia following the February 14, 1945 agreement between King Abd al-Aziz ibn Saud and President Franklin D. Roosevelt, American support for Israel in combination with developments in the dialogue of Arab nationalism had largely pushed Arab states in the Fertile Crescent into Soviet camp.[162]

Hinnebusch notes that "the sovereignty of the individual states and the status quo state system were preserved by anti-hegemonic balancing and, in a crisis, outside intervention."[163] It is not surprising then that Iraqi President al-Bakr petitioned the Soviet Union – the power

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[159] BARNETT, Op. Cit. 130-131.
[160] Ibid. 130-131.
[161] Louise FAWCETT, *International Relations of the Middle East* (Oxford, UK: Oxford University Press, 2005) p. 53.
[162] BARNETT, Op. Cit.
[163] HINNEBUSCH, Op. Cit. 163.

responsible for funding the construction of the Tabaqah dam – for aid in solving its problem with reductions in Euphrates flow emanating from Syria. Indeed, as the Euphrates crisis gained momentum through March and April 1975, Iraqi Revolutionary Command Council Deputy Chairman Saddam Hussein traveled to the Soviet Union on 14 April 1975 to discuss the Euphrates River crisis with Soviet leadership.[164] According to An-Nahar:

> "Baghdad wants to duscuss [sic] a problem which appears to be fateful to it. Moscow had built the Syrian Euphrates dam and it is a friend of Damascus and Baghdad. Therefore, it whould [sic], that is Moscow, have realized the affect on Iraq of building the dam. At least, Moscow should have reached an agreement with the Syrians concerning the quantity of water they should store annually in accordance with international law so that Iraq would not be harmed… Baghdad wants to give Moscow the choice – either an understanding takes place with Damascus to solve the problem amicably – because Damascus, according to Baghdad official opinion, refused to reach an understanding – or relations will completely deteriorate."[165]

The Soviets were faced with the choice of exerting pressure on Syria or facing deterioration in relations with Iraq. The Syrians, of course, saw the matter quite differently: the Soviets needed to continue supporting their technical investment and, at the same time, pressure Iraqi to temper its rhetoric. While Saddam Hussein proclaimed "satisfaction with the outcome of the visit which contributed greatly to strengthening and expanding current relations of freindship [sic] and cooperation at various levels between Iraq and the Soviet Union"[166] during a meeting of the Iraqi Supreme Committee of the Progressive National and Nationalist Front on 22 April 1975, Soviet involvement in the crisis remained limited for the duration.

The origins of Soviet absenteeism from the Euphrates conflict lie in an inability to satisfy the demands of both clients. On the one hand, to side with Syria would alienate Iraq during a period of superpower detente, with Iraqi defection a real possibility. Iraqi-Soviet relations had been hot-and-cold since 1958, and through the oil boom Iraq had sufficient funding to

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[164] 'Problem to be discussed with USSR', Beirut, An-Nahar, 7 April 1975, in FBIS-MEA-75-070 on 10 April 1975, accessed 22 January 2013.
[165] Ibid.
[166] 'Committee discusses Saddam Husayn's Moscow visit', Baghdad, Baghdad Domestic Service, 22 April 1975, in FBIS-MEA-75-078 on 22 April 1975, accessed 22 January 2013.

wean itself from Soviet development aid. On the other hand, for the Soviets to side with Iraq would tarnish a major Soviet technical achievement and be tantamount to admitting technical issues with the hydrologic analysis underlying the construction of the Tabaqah dam. The USSR was clearly engaged in a no-win position, and accordingly maintained a low profile throughout the remainder of the crisis in order to maintain relations with both Iraq and Syria.

Worse still for the USSR, the conflict between Iraq and Syria was taking place in a definitively Arab manner: public criticism in the media. "Because Arab leaders used symbolic technologies to undermine each other from within and to control each other's foreign polices," they recognized "those weapons that counted most: their media."[167] Further Soviet involvement in the crisis risked not just alienating one client over another, but also public embarrassment and castigation at the hands of both Iraq and Syria.

Soviet absenteeism, much like absenteeism of the nominal basin hegemon Turkey, may have contributed to the rise of the conflict. The absence of a hegemon left Iraq and Syria, two states with relative parity in military, economic, and political power, free to pursue the conflict over the Euphrates River.

Section 4.2 Regional Politics

As much as international politics defined the context – weak states in the Fertile Crescent with deficits of legitimacy – within which the 1975 Euphrates River crisis unfolded, regional politics provided the immediate tools within which the conflict between Iraq and Syria was waged, as well as the norms that constrained the conflict.

Section 4.2.1 Pan-Arab Nationalism

The role of Arab nationalism within the context of the 1975 conflict between Syria and Iraq over the Euphrates River is complex. While the pressure for unification of Arab peoples died in the mid-1960s amid the collapses of both the United Arab Republic and the Arab Federation, and the public recriminations following these events, Arabism continued to define norms that guided interstate behavior. "Arabism… shaped how Arab states were expected to present themselves, represented a source of symbolic capital, subjected them to

[167] BARNETT, Op. Cit. 145.

Arab public opinion, and held them accountable to each other."[168] The norms of Arabism and the need to present a unified Arab position in negotiations with Israel applied substantial pressure on Iraq and Syria to solve the 1975 Euphrates River crisis.

At its earliest roots, Arabism emerged and was formed as a discussion about what it meant to be Arabs living in multiple states of colonial delineation and under colonial domination. The colonial powers had imposed upon the Arab world a western concept of states and borders that was foreign both to the loose rule of the Ottoman Empire and to the common linguistic and historical bonds between Arab peoples now separated by artificial borders that ignored local conditions. As Arab states emerged from the mandate system, Arabism retained its anti-colonial, and later anti-Western, roots while incorporating the sense that Arabs should be unified politically to match cultural and historical commonalities. While contests over the meaning of unification ultimately lead to the strengthening of the concept of state sovereignty in the Middle East, the cornerstone of all pan-Arab narratives over time centered on Arab commonalities.[169]

In the sense that Arabism was about Arab commonality, Arabism did not envision inter-Arab conflict. With external threats from colonial powers, as well as from powerful non-Arab states such as Israel, Iran, and Turkey, inter-Arab conflict could only weaken the Arab nation and leave it open once again to subjugation and humiliation at the hands of outsiders. Article I of the 17 June 1950 Treaty of Joint Defense and Economic Cooperation between the States of the Arab League – also known as the Arab Collective Security Pact (ACSP) – explicitly required that "the Contracting States, in an effort to maintain and stabilize peace and security, hereby confirm their desire to settle their international disputes by peaceful means, whether such disputes concern relations among themselves or with other Powers."[170] Moreover, through Arabism there were norms of peaceful settlement of disputes and inter-Arab mediation rather than war.[171] The leaders of Arab states understood that inter-Arab war was

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[168] Ibid. 165.
[169] Ibid. 69-76.
[170] LEAGUE OF ARAB STATES, 'Treaty of Joint Defense and Economic Cooperation between the States of the Arab League', Yale Law School, Lillian Goldman Law Library, The Avalon Project (1945) http://avalon.law.yale.edu/20th_century/arabjoin.asp, accessed 11 March 2013.
[171] HINNEBUSCH, Op. Cit. 211.

not permissible and that the repercussions of an inter-Arab war would be destabilizing to the entire region.

The Syrian military invasion of Jordan during the Black September ouster of the Palestinian Liberation Organization from Jordan in 1970 is the notable counter-example that proves the rule. The Syrians conducted a partial invasion of Jordan, which stemmed partly from an internal power struggle in Syria that saw Hafiz al-Assad rise to power, with the intention of ending inter-Arab violence between Palestinians and the Jordanian military. This provoked strong reactions in the Middle East. "The sight of Arabs aiming rifles at each other when by all rights those rifles should have been directed at Israel caused tremendous anxiety and turmoil throughout the Arab world."[172] In 1975, despite all the political friction between Arab states over the preceding twenty years, an inter-Arab war was still unimaginable.

In response to the 1975 water crisis, Syria made the surprising decision to transfer troops "from the Israeli border to the Iraqi border, where it claimed that Iraqi troops were massing. In return, the Iraqis threatened to bomb the Syrian dam at al-Tabqa."[173] Syrian troop deployment away from the Israeli border and towards Iraq represented a violation of the core of Arabism in the 1970s: "Arabism… became defined by and expressed through the Arab-Israeli conflict."[174] If, in light of poor progress in negotiations over the Golan Heights, Syria was willing to reduce pressure on Israel in order to increase pressure on Iraq, the implication was that Syrian officials believed Iraq the greater imminent threat.

Although it is uncertain why war between Iraq and Syria did not occur – insufficient provocation, not enough to be gained, or social constraints – it is evident that military mobilizations by Iraq and Syria against one another were exceptional. Moreover, the trust lost between the parties over the Euphrates River crisis has permanently ended all significant military cooperation between the two states. Not since the October 1973 war against Israel have Iraqi troops been deployed inside Syria with Syrian consent.

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[172] BARNETT, Op. Cit. 176.
[173] Peter H. GLEICK, 'Water, war & peace in the Middle East', *Environment*, 36/3 (1994), p. 13.
[174] BARNETT, Op. Cit. 165.

Section 4.2.2 Media as a Battlefield

Gamel Abdel Nasser once said, "If you ask me for radio disarmament, you ask me for total disarmament."[175] From 1956 until his death in 1970, Nasser's ability to impact popular Arab sentiment through broadcasts on Radio Cairo had enormous political ramifications. The acute instability in Jordan and Iraq over Western alliances and the Baghdad Pact were created not with the threat of Egyptian military might but with the force of persuasion and charisma. The emergence of Nasser's political media assault as a decisive and deadly force in Arab politics elicited a reaction from other Arab leaders: imitation.

Media conflict emerged as a substitute for conducting war against Arab enemies – particularly in light of the inter-Arab prohibition against warfare. The ethnic identification of Arabs across artificially constructed state borders left Arab societies open to influence from supranational ideologies, particularly pan-Arab nationalism. "Arab states competed to define the events of the day and to establish the norms of Arabism because doing so would further their interests and could act as a mechanism of social control over the foreign policies of other Arab states. Investing the situation with a particular meaning constituted an important source of power for Arab states because it oriented and constrained social action."[176] Technical development, namely the creation of radio facilities that could broadcast throughout the Middle East, enabled leaders to mobilize Arab citizens of other states in order to affect the foreign policy of other Arab states.

According to Barnett,[177] the norms of Arabism were fluid: Arab leaders shaped the norms of Arabism through their discourse and action, while the norms shaped, or constrained, the policy options available to Arab leaders. Leaders attempted to influence policy through the use of the symbols of Arabism, but in doing so Arab leaders often shaped and limited their own policy options. Applying the symbols of Arabism created an expectation in the Arab populace that leaders would take action consistent with their rhetoric. President Nasser, the perceived master of the deployment of the symbols of Arabism, was just as often their slave.

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[175] Ibid. 43.
[176] Ibid. 244-246.
[177] Ibid. 14.

Syrian radicals, by outbidding Nasser's symbolic rhetoric vis-à-vis unification and Israel in 1958 and 1967, respectively, forced Nasser to implement policy detrimental to Egypt in order to maintain his legitimacy as an Arab leader.[178] Nasser's media assault on the Iraqi Hashemite regime and Prime Minister Nuri al-Said, also in 1958, lead directly to al-Said's death and to regime change in Iraq.[179] Media conflict in the Middle East could lead directly to deadly outcomes without the expenditure of significant political, economic, and military capital necessary to conduct a successful invasion. Media conflict was not only effective but also efficient. When Nasser died in 1970, media interaction remained the primary means through which Arab leaders conducted inter-Arab conflict.

It is noteworthy that the most extreme instances of the application of media as a battlefield involved either Iraq or Syria, or both. As two large and ethnically divided states under minority-lead Ba'ath Party rule, both Iraq and Syria were particularly vulnerable to media messaging directed not at the minority-lead regimes but at the disenfranchised majority. It is hardly surprising that the 1975 conflict between Iraq and Syria over the waters of the Euphrates involved media provocations.

In order to conduct media warfare using the symbols of Arabism, a state had first to cultivate or to accrue those symbols. Given their susceptibility to supranational ideology and attacks, the acquisition of the symbols of Arabism was particularly important for Syria and Iraq:

> "Syrians officials consistently proclaim that Syrian and Arab interests are interchangeable: Syria is Arab, the guardian of Arab nationalism… but such rhetoric also reflects the fact that a specifically Syrian identity is only late in the making if present at all."[180]

In many respects, the issue of legitimacy brought Iraq and Syria into repeated media conflict with one another. The Iraqi Ba'ath Party and the Syrian Ba'ath Party derived from different strains of Ba'ath ideology. The two Ba'ath parties struggled for recognition as the true center of Ba'ath ideology. Both states also competed for leadership of Arab Nationalism. The near-total abdication of Egyptian leadership of Arab nationalism following Nasser's death on 28

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[178] Ibid. Chapter 5.
[179] Ibid. 130-131.
[180] Ibid. 181.

September 1970 and Anwar Sadat's Egyptian-centric, rather than Arab-centric, politics following the October 1973 War against Israel intensified the competition between Syrian and Iraqi leaders. Additional domestic factors were also at play in both states.

In Iraq, for example, the Shi'a majority, and Sunni and Kurdish minorities, required subtle balancing that was made substantially easier in the early 1970s by the oil boom. With consolidation of the regime underway through patrimonial networks, growth of the military, and violent suppression of opposition, Iraq could begin to turn its eyes towards its historically-thwarted ambitions for Pan-Arab leadership.[181]

Syria, home to a mix of identities, needed to maintain its Pan-Arab credentials in order to build regime legitimacy and to continue the consolidation of the Alawite minority regime. The oil boom provided an influx of funds –remittances, royalties from Iraq for the use of Syrian oil pipelines, and payments from Arab oil producers to frontline states in the Arab-Israeli conflict – that allowed for modernization of the military and creation of a bureaucracy and middle class upon which the regime could rely.[182] Syria was, thus, similar to Iraq in that by the early 1970s the Syrian regime was becoming increasingly free to exercise a more aggressive regional policy without substantial domestic constraints.

The competition for leadership of Arab nationalism was not limited to Syria and Iraq. The parties that emerged to mediate between Syria and Iraq during the 1975 Euphrates crisis involved a number of Arab political players looking to increase their influence and prestige in the Middle East. Anwar Sadat, despite his increasingly Egyptian rather than Arab political identity, met with both Syrian and Iraqi leaders in search of a mediated solution. Arab League Secretary General Mahmud Riyad hosted meetings of a technical committee on the Euphrates River crisis from 27 April 1975 to 3 May 1975 in Cairo and flew to Damascus on 30 April 1975 to conduct a two-day meeting relating to the Euphrates crisis and the problem of ongoing negotiation with Israel.[183,184] Saudi Arabia also entered the mediation fray. "Saudi Arabia hesitantly assumed inter-Arab leadership, building on the leverage it could potentially

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[181] HINNEBUSCH, Op. Cit. 208-210.
[182] HINNEBUSCH, Op. Cit. 177.
[183] 'Riyad leaves for Damascus', Cairo, Middle East News Agency, 30 April 1975, in FBIS-MEA-75-085 on 1 May 1975, accessed 22 January 2013.
[184] 'Meetings begin in Riyadh', Baghdad, Iraqi News Agency, 29 April 1975, in FBIS-MEA-75-084 on 30 April 1975, accessed 22 January 2013.

wield in the West on behalf of Arab interests as the swing producer in OPEC and by using its wealth to moderate inter-Arab conflicts: indicative of this, in the 1970s it became the focus of most inter-Arab official visits."[185] Saudi Oil Minister Sheikh Ahmed Zaki Yamani engaged in shuttle diplomacy while King Khalid ibn Abd al-Aziz held talks with both Syrian and Iraqi officials in Riyadh.[186] Of the three parties engaged in mediation at the end of April 1975, only the Saudi mediation achieved results.

The conflict between Syria and Iraq had an exceptional – in that inter-Arab war was prohibited under the norms of Arabism – military deployment, but it also followed the more typical forms of inter-Arab conflict by incorporating hyperbolic media attacks by both sides. The dual role of media within the 1975 Euphrates River crisis emerges: media formed the primary battlefield in the 1975 Euphrates River crisis, while the public nature of the conflict simultaneously attracted Arab parties interested in improving their prestige and political clout through mediation of the conflict.

Section 4.2.3 Arab-Israeli Conflict

Arab cooperation during the 1973 October war against Israel had produced for the first time losses – albeit losses that were quickly reversed – by Israel against Arab forces. In the aftermath of the fighting, a policy of 'no peace, no war' was followed by all parties. Arab states called for Israel to comply with United Nations Security Council Resolutions 242 and 338, which stipulated the "withdrawal of Israel armed forces from territories occupied in the recent conflict."[187,188]Unlike previous Arab-Israeli wars, however, the United States did not lean on Israel to return to its pre-war borders; this left Egypt with losses in the Sinai region, while Syria lost the Golan Heights.

In response to the conflict, United States Secretary of State Henry A. Kissinger engaged Egypt and Syria in direct bilateral negotiations. The separate negotiating tracks used by Kissinger weakened the overall bargaining position of the Arab cause by presenting Egypt

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[185] HINNEBUSCH, Op. Cit. 182.
[186] 'Progress of talks assessed', Cairo, Middle East News Agency, 28 April 1975, in FBIS-MEA-75-083 on 29 April 1975, accessed 22 January 2013.
[187] UNITED NATIONS, 'Resolution 338', United Nations (web document) (1973) http://unispal.un.org/unispal.nsf/0/7FB7C26FCBE80A31852560C50065F878, accessed 2 March 2013.
[188] UNITED NATIONS, 'Resolution 242', United Nations (web document) (1967) http://unispal.un.org/unispal.nsf/0/7D35E1F729DF491C85256EE700686136, accessed 2 March 2013.

and Syria with a classical Prisoner's Dilemma: to reach a settlement first would yield the best terms for an individual state, but would also jeopardize any bargaining power possessed by the collective. As bilateral talks progressed, negotiations led to two separate ceasefire agreements: Egypt and Israel signed the Sinai Separation of Forces Agreement – later called Sinai I – on 14 January 1974, while Syria and Israel signed the Separation of Forces Agreement on 31 May 1974. Both agreements stipulated that the parties would "scrupulously observe the ceasefire on land, sea, and air."[189,190]

Throughout 1974 Arab solidarity held, with all Arab parties demanding resolution of all Arab states' grievances – return of the Sinai to Egypt, the Golan Heights to Syria, and resolution of the Palestinian issue – before signing an agreement with Israel. In the spring of 1975, however, Israel was still refusing to withdraw unilaterally from occupied territory. Solidarity was seen as the only means to force Israel's withdrawal from occupied Arab lands. Intra-Arab conflict was seen as a threat to this unified front, and was strongly discouraged. In particular, Arab leaders and the Arab League pressured Syria and Iraq to find a quick solution to the 1975 Euphrates River crisis and to form a unified northern front against Israel in case a war would be necessary to retake occupied Arab lands.

Section 4.2.4 The Algiers Accord

In early 1975, relations between Iraq and Iran were poor and had the potential to become substantially worse. Baghdad had for years been infiltrating anti-government activists and agents into Iranian Khuzestan. The Iranian response to Baghdad's meddling was initially indirect: the Iranian regime provided military support to Mulla Mustafa Barzani, an Iraqi Kurdish leader, who was conducting a revolt in Iraqi Kurdistan.[191] Saddam Hussein, in the summer of 1974, staked his political reputation on a military solution to the Kurdish problem, and, according to Central Intelligence Agency estimates, committed 80% of Iraq's military to

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[189] AMERICAN ISRAELI COOPERATIVE ENTREPRISE, 'Separation of Forces Agreement (Sinai I)' American Israeli Cooperative Enterprise (web page) (2013) http://www.jewishvirtuallibrary.org/jsource/Peace/sepforce.html, accessed 24 February 2013.

[190] ISRAEL MINISTRY OF FOREIGN AFFAIRS, 'Israel-Syria Separation of Forces Agreement 1974', Israel Ministry of Foreign Affairs (web page) (2008) http://www.mfa.gov.il/MFA/Peace+Process/Guide+to+the+Peace+Process/Israel-Syria+Separation+of+Forces+Agreement+-+1974.htm, accessed 24 February 2013.

[191] CENTRAL INTELLIGENCE AGENCY OF THE UNITED STATES OF AMERICA, 'The Implications of the Iran-Iraq Agreement', (web document) (1975) http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB167/01.pdf, accessed 9 March 2013.

the Kurdish campaign.[192] Such concentration of military power forced Kurdish retreat. In response, "the Shah introduced Iranian artillery and air defense units directly into the fighting inside Iraq"[193] in August 1974. The Iranian injection halted Iraqi advances, thus preserving the Shah's Kurdish card in regional politics; however, Kurdish fighters proved unable to regain lost territory during the winter. Therefore, the strategic position of Kurdish fighters vis-à-vis the Iraqi armed forces was poor to start 1975. To avoid total destruction of the Kurdish fighting capability in Iraq, Iranian commitment would have had to increase with a risk of entering into a direct war with Iraq.

Iran and Iraq had also been quarreling over their respective border along the Shat-al-Arab, the portion of the Euphrates River that lies downstream from its confluence with the Tigris River. A 1937 agreement had delineated the Iran-Iraq border to lie on the Iranian shoreline, leaving Iraq in complete control of shipping rights along the Shat-al-Arab.[194] Iran's stated desire was for a return to the delineation established under the Ottoman Empire, which saw the Iran-Iraq border running along the thalweg of the river.

At an OPEC meeting in Algiers on 6 March 1975, Saddam Hussein, Vice-Chairman of the Iraqi Revolutionary Command Council, and Shah Mohammad Reza Shah Pahlavi, the Shah of Iran, met with Algerian President Houari Boumediène.[195] The agreement between Saddam Hussein and the Shah became known as the Algiers Accord. The two public points of the Algiers Accord involve the delineation of the border between Iran and Iraq along the thalweg of the Shat-al-Arab, and the implementation of strict border controls between the two nations. An implicit understanding also accompanied the Accord: Iran received the border delineation it desired in return for cessation of direct Iranian military aid to Kurdish rebels in Iraqi Kurdistan. Without Iranian aid, Kurdish fighters were quickly overrun by an Iraqi offensive in early March 1975.[196]

The signing of the Algiers Accord had two major impacts on the 1975 Euphrates crisis between Iraq and Syria. First, the cessation of Iranian military support for Kurdish separatists

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[192] Ibid. 3.
[193] Ibid. 3.
[194] Ibid. 2.
[195] Ibid. 2.
[196] Ibid. 3.

freed the Iraqi military to be mobilized along the border with Syria. In a counter-factual analysis, Iraq's military provocations towards Syria between April 1975 and August 1975 would have been impossible, or exceedingly reckless, without an end to the Kurdish campaign. Indeed, the CIA's analysis of the ramifications of the Algiers Accord indicates a concern that "Baghdad may now devote more time to its other feuds and border disputes,"[197] with Syria and Kuwait provided as examples. Second, Iran's geostrategic position, as an outside threat against the Arab core, made Iraqi border concessions unpopular with the Arab public and radical Arab leaders. As a minority-lead regime seeking legitimacy in a fragmented society, the narrative of Iraqi concessions to an outside power – a narrative cited by Hafiz al-Assad and Syrian officials throughout the Euphrates crisis – required a political response that portrayed the regime in Baghdad as a responsible Arab regime protecting the interests of Iraqis.[198]

Section 4.3 Conclusion

The legacy of colonialism left behind fragmented societies in Iraq and Syria, and post-independence struggles in all basin states saw all still consolidating in 1975. Moreover, the absenteeism of the USSR and Turkey combined with the parity of Iraq and Syria may have contributed to opening space for conflict. Arab nationalism not only prohibited inter-Arab war but also provided the alternative battlefield, the media, in which inter-Arab power and consensus was contested. The Arab-Israeli conflict provided a constraint on the conflict and substantial regional pressure for a quick resolution of the 1975 Euphrates River crisis. Finally, the Algiers Accord freed the Iraqi military from the Kurdish insurrection and provided a narrative of attack for Syria. As we shall see, both sides throughout the 1975 Euphrates River crisis deftly applied each of these themes.

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[197] Ibid. 5.
[198] 'Spokesman comments on Euphrates crisis with Iraq', Damascus, Syrian Arab Nes Agency, 19 April 1975, in FBIS-MEA-75-077 on 21 April 1975, accessed 22 January 2013.

Chapter 5 The 1975 Euphrates River Crisis

Section 5.1 A Precursor: The 1974 Euphrates conflict

The 1975 crisis between Syria and Iraq over reduced flows in the Euphrates River developed over several years. A multi-year drought and hydropower operations beginning in 1974 at the Keban dam and in 1973 at the al-Tabaqah dams had reduced flow in the Euphrates River to levels that were adversely impacting the ability of Iraqi farmers to grow crops. Winter harvests in Iraq during both 1974 and 1975 were poor and a global food crisis had substantially increased the price of wheat.

On 29 May 1974, Iraqi Irrigation Minister Mukarram al-Talabani traveled to Syria to continue "the discussions held by the political leadership and the ministry's technical department with officials in Turkey and Syria to secure Iraq's just rights to the common waters of the Euphrates River, and to deal with the problem of the water shortage in the Euphrates Basin."[199] By 18 August 1974, Iraq had presented a proposal to Hafiz al-Assad "to add 1,000 cubic meters per second from the waters of the Syrian dam At-Tabaqah for a period of 3 weeks only."[200] On 19 August 1974, the Baghdad Domestic Service reported successful conclusions to the water shortage negotiations:

> "Meetings held with Turkish officials resulted in an agreement providing for the fulfillment of Iraq's need for water. Water will be released from Turkey's Keban dam at the rate of 325 cubic meters per second. According to the agreement, Turkey will compensate Syria for releasing 100 cubic meters per second from Syria's at-Tabaqah dam to Iraq to overcome Iraq's shortage of water."[201]

The release of flow from the Keban dam was effectively compensation to Syria for reduced flows from Turkey during periods in which the turbines at the Keban dam were not in

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[199] 'Minister to discuss Euphrates River problem with Syria', Baghdad, Iraqi News Agency, 29 May 1974, in FBIS-MEA-74-105 on 30 May 1974, accessed 22 January 2013.
[200] 'al-Asad discusses water sharing with Iraqi Minister', Baghdad, Baghdad Domestic Service, 18 August 1974, in FBIS-MEA-74-161 on 19 August 1974, accessed 22 January 2013.
[201] 'Result of talks', Baghdad, Baghdad Domestic Service, 19 August 1974, in FBIS-MEA-74-162 on 20 August 1974, accessed 22 January 2013.

operation.[202] Iraqi Industry Minister Taha al-Jazrawi expressed his confidence that "the quantity of water which will flow to Iraq will meet our needs."[203]

The conflict between the co-riparians over Iraq's dwindling share of the waters of the Euphrates River boiled down to orchestrating increased releases from two newly constructed hydropower dams in Turkey and Syria. The issue was technical, and the parties were able to find a negotiated solution to Iraq's water shortage problem despite drought conditions. The agreement provided for an increase in the flow of the Euphrates River, with Turkey compensating Syria for releasing more water to downstream Iraq. What was not made clear was whether the negotiated flow increases represented a temporary fix or the new norm. As the drought continued throughout the winter, the uncertainty over the temporal nature of the agreement became the launching pad for a repetition of the 1974 Euphrates River crisis, albeit a substantially more tense repetition, beginning in March 1975.

Section 5.2 Initiation of the 1975 Euphrates Crisis

In his speech on the fourth anniversary of the March Revolution, Syrian President Hafiz al-Assad commented, "work continues to complete the Euphrates Dam reservoir and its hydroelectric station, as well as irrigation and land reclamation projects and projects in the field of agricultural development."[204] Syrian agricultural and economic development, in which the al-Tabaqah dam was intended to play a significant role, was being achieved. Syria, much like Turkey with the GAP project, sought to develop the rural eastern portions of the state by creating agricultural opportunities while generating electricity to fuel urban development and industrialization. Both the Turkish and the Syrian visions for using the waters of the Euphrates River were, however, consumptive in nature. Therefore, for Iraq, Turkish and Syrian ambitions could be viewed in the context of a zero-sum game: upstream withdrawals for irrigation would directly reduce the flows into Iraq.

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[202] 'Added details', Baghdad, Baghdad Domestic Service, 19 August 1974, in FBIS-MEA-74-162 on 20 August 1974, accessed 22 January 2013.
[203] 'Result of talks', Baghdad, Baghdad Domestic Service, 19 August 1974, in FBIS-MEA-74-162 on 20 August 1974, accessed 22 January 2013.
[204] 'President al-Asad addresses rally', Damascus, Damascus Domestic Service, 8 March 1975, in FBIS-MEA-75-047 on 10 March 1975, accessed 22 January 2013.

On 22 March 1975, the General Federation of Peasant Associations and the General Federation of Agricultural Cooperatives sent telegrams to Iraqi President Ahmad Hasan al-Bakr, Syrian President Hafiz al-Assad, the Arab League secretary general, and other Iraqi professional groups protesting against "the Syrian Government for violating recent agreements under which it has undertaken to release suitable quantities of water, and for reducing the quantities of water during the current month of March."[205] Clearly, the Iraqis viewed any flow reduction as a unilateral abrogation of the agreement that ended the Euphrates River crisis of the preceding year. The media onslaught by these Iraqi federations formed the basis of Iraqi claims that more than 3 million Iraqi peasants were being made destitute through a reduction in flow into Iraq from Syria.[206] Both Mukkaram al-Talabani and Taha al-Jazrawi cited these numbers in the closing days of March 1975. Indeed, both went further. Al-Talabani directly blamed Syria for the failure, since 1962, to negotiate flow allocations on the Euphrates River.[207] Al-Jazrawi accused the Syrian regime of having a "hostile attitude toward Iraq," which he detailed as providing military aid to Kurdish separatists, increasing Iraqi tolls for using the Syrian oil pipeline, usurping "the name of the Ba'ath party for itself," and collaborating on peace plans with the Americans in an attempt at "liquidating the Palestine issue."[208] The Iraqi media attack had begun.

The following weeks saw increasingly vitriolic Iraqi rhetoric unleashed in speeches, newspapers, and radio announcements. The Baghdad-based At-Ta'akhi newspaper questioned the motivations of Syrian policy regarding the Euphrates River flows as "an attempt to divert the attention of the Arab nationalist forces to something other than the trend of Syrian regime toward its 'peaceful' endeavors with the Zionist entity and the United States."[209] The Iraqi newspaper Ath-Thawrah accused the Syrian regime of "arbitrariness"

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[205] 'Federations protest Syria's withholding of Euphrates water', Baghdad, Iraqi News Agency, 22 March 1975, in FBIS-MEA-75-058 on 25 March 1975, accessed 22 January 2013.
[206] 'Organization leaders denounce Syrian stand on Euphrates', Baghdad, Baghdad Domestic Service, 27 March 1975, in FBIS-MEA-75-064 on 2 April 1975, accessed 22 January 2013.
[207] 'Syria blamed for failure of talks on Euphrates water', Baghdad, Baghdad Domestic Service, 25 March 1975, in FBIS-MEA-75-059 on 26 March 1975, accessed 22 January 2013.
[208] 'al-Jarawi comments on Syria's hostile attitude', Baghdad, Baghdad Domestic Service, 27 March 1975, in FBIS-MEA-75-061 on 28 March 1975, accessed 22 January 2013.
[209] 'Paper criticizes Syrian stand', Baghdad, Iraqi News Agency, 29 March 1975, in FBIS-MEA-75-064 on 2 April 1975, accessed 22 January 2013.

and cited the long historic record the Euphrates River for providing sufficient water for the cultivation of land along its banks and for drinking water.[210]

The Higher committee of the Progressive National and Nationalist Front of Iraq issued a statement directed "to our people in sisterly Syria asking them to be aware of what is going on and to become informed about the serious threat to the lift [sic] of our toilers in the Euphrates basin, dangers for which the Syrian regime alone will be responsible."[211] The Iraqi media campaign sought to generate domestic pressure on the Syrian regime.

The Syrian response to the Iraqi media assault was swift. On 8 April 1975 the "Beirut daily Al-Kifah al-'Arabi today reported that high-ranking Syrian government officials had been recently exposed as spies."[212] Syrian Ba'ath party secretary general Abdullah Ahmar "accused the Iraqi Ba'ath Party of plotting to subvert Arab solidarity," called them "defeatists of the fascist Iraqi right," and called for the Iraqi regime to "allow the Iraqi Army to return to the true Ba'thist path so the Iraqi people could have 'true democracy.'"[213]

Section 5.3 Negotiations and the Media War

While tensions in the media were ramping up, so too were multiple, often simultaneous, diplomatic initiatives concerning the Euphrates River crisis. On April 17 1975, Iraqi President Hasan al-Bakr sent envoys to the heads of state of 17 Arab countries.[214] The mission was clear: to drum up Arab support for the Iraqi plight in advance of meetings of the Arab League. Indeed, drawing on shared Arab identity, Dr. Rashid Rifa'i, one of the envoys, stated, "The inevitable disaster which awaits the Euphrates peasants and their crops and animals as a result of the continued damming up of the Euphrates River water by the Syrian regime, as well as the likelihood that these peasants will have to abandon their lands, are

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[210] 'ath-Thawrah comments on dispute', Baghdad, Baghdad Domestic Service, 6 April 1975, in FBIS-MEA-75-069 on 9 April 1975, accessed 22 january 2013.
[211] 'Campaign against Syria on Euphrates water continues', Baghdad, Iraqi News Agency, 9 April, 1975, in FBIS-MEA-75-070 on 10 April 1975, accessed 22 January 2013.
[212] 'Government officials exposed as Iraqi spies', Paris, Agence France Presse, 8 April 1975, in FBIS-MEA-75-069 on 9 April 1975, accessed 22 January 2013.
[213] Ibid.
[214] 'al-Bakr contacting Arab leaders on dispute with Syria', Baghdad, Baghdad Domestic Service, 16 April 1975, in FBIS-MEA-75-075 on 17 April 1975, accessed 22 January 2013.

matters which concern every sincere Arab."[215] The Iraqi diplomatic outreach was intended to draw on Arab identity to generate sympathy that would allow Iraq to control the narrative of the crisis. The consistent Iraqi narrative at this stage was the suffering of the Iraqi peasant at the hands of the Syrian regime.

At the same time that media rhetoric and Arab diplomatic efforts were commencing, Iraq, Syria, and Turkey were conducting talks regarding the Euphrates River crisis. On 25 April 1975 Iraqi Irrigation Minister Mukkaram al-Talabani indicated that Syria was withholding water to drive its turbines for the purpose of electricity generation.[216] The Iraqi response, reflective of the impact the global oil boom was having on Iraqi policy, was to offer to pay Syria's outstanding electricity bills to Lebanon and then to pay to have additional electricity provided by Lebanon to Syria.[217] Such an approach would free Syria to release additional water at the al-Tabaqah dam. Additionally, it was revealed that low flow emanating from Turkey was caused in part by the breakdown of three of four turbines at the Keban dam.[218] Iraq offered to pay for their immediate repair; however, the Iraqi offer was rejected because Turkey claimed that repair was the responsibility of a western firm that had installed the turbines. The multi-lateral talks were, thus, unproductive.

The Arab League meetings began on April 21, 1975 and proceeded over the following weeks. The initial Arab League meetings resulted in the formation of a technical subcommittee that would begin consultations on 26 April 1975. The subcommittee comprised representatives from Egypt, Algeria, Morocco, Sudan, Tunisia, Saudi Arabia, and Kuwait and was headed by Sudanese Minister of Irrigation Yahya Abd al-Majid.[219,220] Both Iraqi and Syrian delegations provided substantiating information to the technical subcommittee.[221] The technical subcommittee completed its review and submitted its findings to the larger Arab League

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[215] 'al-Bakr envoys depart with letters on Euphrates water dispute', Baghdad, Iraqi News Agency, 17 April 1975, in FBIS-MEA-75-076 on 18 April 1975, accessed 22 January 2013.
[216] 'Irrigation Minister comments on Euphrates dispute', Baghdad, Iraqi News Agency, 25 April 1975, in FBIS-MEA-75-081 on 25 April 1975, accessed 22 January 2013.
[217] Ibid.
[218] Ibid.
[219] 'Irrigation Minister leaves for Cairo meetings', Baghdad, Baghdad Domestic Service, 26 April 1975, in FBIS-MEA-75-083 on 29 April 1975, accessed 22 January 2013.
[220] 'Further details', Baghdad, Iraqi News Agency, 29 April 1975, in FBIS-MEA-75-084 on 30 April 1975, accessed 22 January 2013.
[221] 'Information Minister comments on Euphrates River problem', Cairo, Middle East News Agency, 28 April 1975, in FBIS-MEA-75-083 on 29 April 1975, accessed 22 January 2013.

committee on 29 April 1974; however, no Arab League action was to be taken prior to consultation of both the Iraqi and Syrian delegations with their governments.[222] On 1 May 1975, Syria withdrew from the Arab League committee, citing continued Iraqi media campaigns as a violation of the principles of the Arab League mediation. The official statement by the Syrian Foreign Ministry claimed:

> "By nature, the Arab League decision is an indivisible unit. Subsequently, the Syrian Government is now absolved of agreeing to the committee continuing its work… We have also asked the delegation not to continue with the committee's work.
>
> The Syrian Arab republic holds the Iraqi Government responsible for all the results emanating from its continuation of this [media campaign] policy, which greatly harms the principal pan-Arab cause and the interests of the two fraternal peoples."[223]

The Syrian withdrawal from the Arab League committee did not, however, end diplomatic efforts. Mahmud Riyad, the Secretary General of the Arab League, held talks with Syrian Foreign Minister Abd al-Kalim Khaddam in Damascus.[224]

Even while the Arab League talks were ongoing, Saudi Arabian Oil Minister Sheikh Ahmed Zaki Yamani, on behalf of King Khalid ibn Abd al-Aziz of Saudi Arabia, initiated shuttle diplomacy. Unlike other talks, which occurred only at the ministerial level, Sheikh Yamani's diplomatic outreach was conducted on two fronts. Sheikh Yamani held joint sessions with the Syrian Minister of the Euphrates Dam, Subhi Kahhalah, and the Iraqi Irrigation Minsiter, Mukarram al-Talabani. Sheikh Yamani also held separate but direct talks with Hafiz al-Assad and Saddam Hussein. The emergence of the Saudis as a mediator stemmed both from the retreat of radical Arab nationalism and from the emergence of Saudi oil wealth during the oil boom. The initial success of the Saudi effort was an agreement on the allocation of the Euphrates River waters. The news of an agreement was greeted enthusiastically by Mahmud

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[222] 'Further details', Baghdad, Iraqi News Agency, 29 April 1975, in FBIS-MEA-75-084 on 30 April 1975, accessed 22 January 2013.
[223] 'Text of Syrian statement', Damascus, Syrian Arab News Agency, 1 May 1975, in FBIS-MEA-75-086 on 2 May 1975, accessed 22 January 2013.
[224] 'Syria withdraws from committee', Cairo, Middle East News Agency, 1 May 1975, in FBIS-MEA-75-085 on 1 May 1975, accessed 22 January 2013.

Riyad, despite Syria's withdrawal from the Arab League committee on the issue.[225] Unfortunately, according to Mukkaram al-Talabani, upon completion of the negotiation the Syrian negotiators refused to sign the joint statement that they had agreed upon.[226] Despite the setback, mediation efforts continued while media attacks began anew.

On 3 May 1975, the tripartite committee – comprised of Saudi Arabia, Iraq, and Syria – issued a statement:

> "The committee reviewed the causes of dispute between the two fraternal countries Syria and Iraq on the distribution of the Euphrates River water and discussed the various points of view and the principles on which the distribution can be based. The committee has decided that each minister return to his government to review the viewpoints exchanged in preparation for holding another meeting after the definition of stands."[227]

Sheikh Yamani continued shuttle diplomacy between the two sides. On 5 May 1975 he visited Iraqi President Ahmad Hasan al-Bakr in Baghdad, King Khalid ibn Abd al-Aziz in Riyadh, and Hafiz al-Assad in Damascus.[228] Despite the ongoing diplomatic efforts, Syria continued its media counter-offensive against Iraq. Whereas Iraq attacked Syria with a narrative of Syrian aggression against three million Iraqi peasants, Syria wielded a narrative of Iraq as the betrayer of pan-Arab nationalism. An editorial in Al-Ba'th accused Iraq of betraying the Arab people:

> "After the fascist right in Iraq signed the agreement of 6 March 1975 with Iran it immediately committed the ugliest of national crimes against our Arab people by giving up Arabstan and Shatt al-'Arab and pledging to abolish the term 'Arab Gulf' from its lexicon. This suspect rule tried to cover up its crime by fabricating side

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[225] 'Riyad comments on agreement', Cairo, Middle East News Agency, 2 May 1975, in FBIS-MEA-75-087 on 5 May 1975, accessed 22 January 2013.
[226] 'Minister at-Talabani on Euphrate water dispute', Baghdad, Iraqi News Agency, 3 June 1975, in FBIS-MEA-75-108 on 4 June 1975, accessed 22 January 2013.
[227] 'Ministerial committee statement', Riyadh, Riyadh Domestic Service, 3 May 1975, in FBIS-MEA-75-087 on 5 May 1975, accessed 22 January 2013.
[228] 'Saudi envoy Yamani arrives in Damascus from Baghdad', Cairo, Middle East News Agency, 6 May 1975, in FBIS-MEA-75-089 on 7 May 1975, accessed 22 January 2013.

battles against Arab Syria… an action which even Nuri as-Sai'id and the old Baghdad Pact clique did not dare commit."[229]

The final line of the editorial left no illusions as to the desired outcome within Iraq:

"We have boundless confidence in our Arab people in Iraq and in its national army which refuses to be a tool for repression and terror in the hands of its fascist rulers. This army is capable of disciplining those who are working to destroy Arab solidarity and disperse the Arab nation's forces in confronting the Zionist enemy."[230]

In evoking Nuri al-Said and the bloody military coup that ended his life and Iraq's participation in the Baghdad Pact, it was clear that "disciplining" was tantamount to toppling the Ba'ath regime in Iraq. Such venom was not wielded only by the Syrian regime. The Ba'ath Party organizations in Romania and Bulgaria "urged the Iraqi people and the progressive and revolutionary forces in fraternal Iraq and sincere patriots to move against the bastions of the suspicious right and to destroy their hangmen."[231]

The 7 May 1975 Al-Ba'th editorial and the statements by Syrian Euphrates Dam Minister Subhi Kahhalah brought, for the first time, hydrologic reasoning into the public argument over the allocation of the Euphrates River. The Al-Ba'th editorial claimed "Iraq receives 75 percent of the Euphrates River waters entering Syria's borders," and presented an estimate of 12 billion cubic meters of flow during the 1974 water year in comparison to Iraqi demands of a guaranteed 14 billion cubic meters of flow.[232] These figures varied from the flow quantities discussed by Kahhalah, who indicated that Syria had received 18 billion cubic meters of flow from Turkey and passed half that total volume into Iraq in 1974.[233] Kahhalah noted that Syria had been particularly generous in the early months of 1975, passing to Iraq 5 billion of the total 8 billion cubic meters of Euphrates River flow that reached Syria.[234] In a demonstration

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[229] 'Al-Ba'th comments on dispute over Euphrates River water', Damascus, Damascus Domestic Service, 7 May 1975, in FBIS-MEA-75-090 on 8 May 1975, accessed 22 January 2013.
[230] Ibid.
[231] 'Sudanese Student Union statement', Damascus, Syrian Arab News Agency, 3 June 1975, in FBIS-MEA-75-109 on 5 June 1975, accessed 22 January 2013.
[232] 'Al-Ba'th comments on dispute over Euphrates River water', Damascus, Damascus Domestic Service, 7 May 1975, in FBIS-MEA-75-090 on 8 May 1975, accessed 22 January 2013.
[233] 'Minister refutes Iraqi falsehoods on Euphrates water', Damascus, Damascus Domestic Service,7 May 1975, in FBIS-MEA-75-089 on 7 May 1975, accessed 22 January 2013.
[234] Ibid.

of perfect hydrologic rationale, Kahhalah noted that the Iraqi position – requesting a guarantee of 13 billion cubic meters annually from Syria – ignored the uncertainty of flow from Turkey and the role played by the Keban dam in Turkey.[235,236]In light of the uncertainty in rainfall and runoff from year to year, the Euphrates Dam Minister Kahhalah suggested that Syria and Iraq share flow equally.[237]

Turkish Ministry of Foreign Affairs Secretary General Sukru Elekda vigorously denied that Turkey might be to blame in the Euphrates River crisis. Elekda responded to a Syrian proposition that Iraq and Syria form a joint negotiating position vis-à-vis Turkey by saying "that mediating between Syria and Iraq in their dispute over the waters of the Euphrates was not among Turkey's duties."[238] Elekda qualified this statement by saying that unofficially the issue might be discussed between Turkey and Iraq, but Turkey remained steadfastly on the sidelines. In July, Mukkaram al-Talabani met with Turkish Minister of Power and Natural Resources Salahattin Kilic to discuss the role of the Keban dam in the crisis and the impact of the planned Karakaya dam.[239] It is in the context of this visit that the degree of naiveté of the Iraqi leadership regarding systemic realized water scarcity becomes evident. A joint communiqué issued by al-Talabani and Kilic expressed the jointly-held opinion that "the system applied in using the waters of the Keban Dam had favorable influences on irrigation in Iraq" and that "although the Keban Dam plays an important part in meeting Iraq's irrigation needs, it is insufficient," requiring that Syria use Lake Assad in a manner consistent with Iraqi interests.[240] Moreover, the communiqué indicated that the Karakaya dam, planned for the lower Euphrates River in Turkey would also be favorable to Iraqi irrigation interests.[241]

The claims were both true and disingenuous. Prior to construction in Turkey and Syria of the initial flood control and hydropower dams along the Euphrates River, the flow rate in Iraq

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[235] Ibid.
[236] 'Syrian Minister proposed tripartite meeting on Euphrates', Ankara, Ankara General Service, 7 May 1975, in FBIS-WEU-75-090 on 8 May 1975, accessed 22 January 2013.
[237] Ibid.
[238] 'Foreign Ministry Secretary General depart for Iraq', Ankara, Ankara Domestic Service, 10 May 1975, in FBIS-WEU-75-092 on 12 May 1975, accessed 22 January 2013.
[239] 'Iraqi Irrigation Minister arrives in Ankara', Ankara Domestic Service, 7 July 1975, in FBIS-WEU-75-133 on 10 July 1975, accessed 22 January 2013.
[240] 'Turkish-Iraqi communique on Euphrates talks', Ankara, Ankara Domestic Service, 10 July 1975, in FBIS-WEU-75-134 on 11 July 1975, accessed 22 January 2013.
[241] Ibid.

varied between 180 cms and 5,200 cms depending upon the season.[242] While more consistent flow rates achieved through Turkish dam operations might benefit Iraq, decreased flow volumes associated with Turkish agricultural development would not. Given the enmity between Iraq and Syria, the Turkish masterstroke in 1975 was to ask both downstream riparians to jointly "define the various bases for discussion regarding the Tigris and the Euphrates and other joint waters."[243] The deteriorated relations between Syria and Iraq doomed tripartite talks between the co-riparians for years.

The Syrian media counter-offensive continued from all quarters. On 13 May 1975, Major General Mustafa Talas, deputy commander of the army and armed forces and minister of defense, noted: "The fascist right in Iraq has fabricated the story of the Euphrates River waters in these difficult circumstances, although it is an old story which began when the Syrian Arab Republic constructed a dam to regulate irrigation in the Euphrates basin. However, the fascist rightwing regime in Iraq chose the time when it found the Arab rank uniting to activate this crisis in a desperate attempt to preoccupy us from our main battle with the Zionist enemy. We feel bitter at this unethical action, which can only be described as treachery and backstabbing."[244] The Syrian media offensive had quickly shifted to gain traction with a wider Arab audience. Syria attacked Iraq indirectly by reminding the Arab world of its attempts to win resolution for the Palestinians. Iraq's media onslaught was portrayed as an obstacle to the greater Arab cause.

Tensions between Iraq and Syria mounted ever higher towards the end of May 1975. On 10 May 1975, Syria closed the Damascus office of Iraqi Airways and the Baghdad office of Syrian Arab Airlines.[245] Both would stay closed throughout the crisis and into the fall. Later in May, according to the Iraqi News Agency, a Sudanese student in Damascus was arrested for speaking out against Syrian policy regarding the Euphrates River crisis.[246] In Baghdad,

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[242] GLEICK, YOLLES, and HATAMI, Op. Cit. 12.
[243] 'Demirel discusses economic, energy plans', Ankara, Ankara Domestic Service, 27 July 1975, in FBIS-WEU-75-146 on 29 July 1975, accessed on 22 January 2013.
[244] 'Defense Minister Talas speaks to graduates', Damascus, Damascus Domestic Service, 13 May 1975, in FBIS-MEA-75-094 on 14 May 1975, accessed 22 January 2013.
[245] 'Foreign Ministry Secretary General departs for Iraq', Ankara, Ankara Domestic Service, 10 May 1975, in FBIS-MEA-75-092 on 12 May 1975, accessed 22 January 2013.
[246] 'Official denies attack on Syrian attaché in Baghdad', Baghdad, Iraqi News Agency, 29 May 1975, in FBIS-MEA-75-105 on 30 May 1975, accessed 22 January 2013.

according to Al-Ba'th, a Syrian military attaché was stabbed.[247] Both states denied the events vociferously. The sensationalization of events in the media in both Iraq and Syria served only to provide a context for each to repeat its Euphrates River narratives in increasingly shrill tones.

An Al-Ba'th editorial is worth quoting in its entirety as an example of the hyperbolic language and Arab symbols being used to attack the legitimacy of each state via the media:

> "The savage crime committed by the fascist rightist clique against a Syrian diplomat, although it was not the only one committed by hands stained with the blood of honest strugglers, confirms, above anything else, the desperate state of the Baghdad rulers following the devastating failure of their misleading campaign against our struggling region.
>
> The suspect regime believed, when it fabricated the Euphrates water crisis and used it as a pretext for cheap outbiddings, that it would achieve its ends to cover up its pan-Arab treason and conceal it from the masses.
>
> However, At-Tikriti's plan, which is linked with the Zionist and imperialist plans, has turned against him and against the rightist clique which persists in committing crimes of treason and betrayal.
>
> The fascist rightist clique believed that its 'secretly' implemented crimes would remain within the walls of prisons and detention camps or hidden within the complicity of treason.
>
> At-Tikriti's plan has turned against him and against the spiteful rightist clique, which under the cover of darkness penetrated the homes of the citizens, believing that by bloody terrorism it could suppress the voices of Baghdad.
>
> The criminal hands, which stabbed an Arab citizen of a region representing the bastion of steadfastness against the Zionist enemy plans, could not be Arab hands because national treason has deprived them of their identity and affiliation. The voice

[247] Ibid.

of the Baghdad masses will remain stronger than the daggers of At-Tikriti and the fascist rightist clique, which will inevitably turn against the traitors."[248]

The Syrian media strategy linked Iraq with elements and events considered to be outside the Arab consensus, including collusion with the Americans and the Israelis. The vitriol took a distinct step forward when Syria explicitly claimed that the Iraqi regime was no longer Arab. How could a non-Arab regime legitimately rule in an Arab state? Like previous editorials calling for coup in Iraq, the goal remained the same: to destabilize the Iraqi regime as efficiently as possible without actually having to engage in inter-Arab war.

Amidst all the vitriol at the close of May, on 3 June 1975 Syria unilaterally increased flow from the Tabaqah dam to 450 cubic meters per second.[249] The tone of the press release in the Damascus Domestic Service could not have been more different from the Al-Ba'th editorial printed only days before:

"In light of the good offices made available by the fraternal Kingdom of Saudi Arabia and in view of the fraternal Iraqi people's needs, particularly during this period in which Euphrates River water is scarce, the Syrian Government has decided to supply from its own share the requirements of the fraternal Iraqi region, regardless of the Iraqi regime's stand… The Syrian Government expects this to be beneficial in arriving at a permanent agreement on the sharing of the Euphrates water in a short period of time."[250]

The mediation by Saudi Arabia in early May had centered on the immediate release of additional flow, totaling 450 cubic meters per second, to end the current crisis in Iraq and the continuation of negotiations towards a permanent solution to the problem of flow allocation between Syria and Iraq. The agreement stipulated that Syria was not obligated to release water that would cause the operating level in the impoundment to drop below an elevation of

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[248] 'Damascus paper lashes Iraqi rulers on Euphrates', Damascus, al-Ba'th, 2 June 1975, in FBIS-MEA-75-110 on 6 June 1975, accessed 22 January 2013.
[249] 'Text of President's interview with Lebanon's al-Hawadith', Damascus, Damascus Domestic Service, 26 June 1975, in FBIS-MEA-75-125 on 27 June 1975, accessed 22 January 2013.
[250] 'Government decides to supply Iraq with Euphrates water', Damascus, Damascus Domestic Service, 3 June 1975, in FBIS-MEA-75-107 on 3 June 1975, accessed 22 January 2013.

285 meters.[251] While these terms had not been acceptable in early May, Syria unilaterally initiated the terms of the Saudi Arabian mediation at the beginning of June. The initial phase of the 1975 Euphrates River crisis was over.

While the crisis in Iraq largely ended at the beginning of June when flow in the Euphrates River rose to average conditions, the war of words between Mukkaram al-Talabani and Subhi Kahhalah continued unabated. The media accusations during the previous phase of the crisis had involved narratives of suffering Iraqi peasants, Syrian greed and indifference, Iraqi treachery in signing the Algiers Accord, and distraction from Arab-Israeli conflict. Relatively little discussion was had over the hydrology of the Euphrates River basin and its relationship with the crisis. In contrast, the new media conflict emerging in June centered squarely on water rights and the proportion of Euphrates River flow exiting Turkey that would be passed from Syria to Iraq.

On 8 June 1975 Iraqi Irrigation Minister Mukkaram al-Talabani lashed out at Syria on two fronts. First, al-Talabani criticized the Syrian increase in flow starting 3 June as too little too late. Iraq estimated that 70% of Iraqi winter crops had been lost as a result of Syria's choice to release inadequate water from the Tabaqah dam.[252] The increased flow in the Euphrates, according to al-Talabani, was only useful for drinking water, late harvest corn, and salvaging what remained of Iraqi orchards and livestock.[253] Second, al-Talabani referenced studies by the World Bank and the Soviet Union in support of an Iraqi claim, based on assessed need for agriculture, to between 12.6 and 13.783 billion cubic meters of flow annually.[254] Furthermore, Dr al-Talabani highlighted that Syria had been taking more than its assessed need, which the World Bank reported at 5.25 billion cubic meters annually.[255]

Euphrates Dam Minister Subhi Kahhalah responded on 15 June 1975. The Syrian logic differed clearly from the Iraqi hydrologic approach. Whereas Iraq referenced overall volumes, Syrian argumentation focused upon the proportion of Euphrates River flow that was passed to Iraq. Through March 1975, Syria had passed to Iraq 4.542 billion cubic meters of

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[251] 'INA Reports Statement', Baghdad, Iraqi News Agency, 9 June 1975, in FBIS-MEA-75-112 on 10 June 1975, accessed on 22 January 2013.
[252] Ibid.
[253] Ibid.
[254] Ibid.
[255] Ibid.

the 6.125 billion cubic meter inflow, representing almost 75% of Euphrates River inflow from Turkey.[256] Using proportional logic, Syria had generously exceeded its proportional obligation – 60% to Iraq, 40% to Syria – recommended in the Soviet and World Bank studies.[257] The Syrian rationale, however, went further. Citing the decline in Euphrates River flow at the Syria-Turkey border from 28 billion cubic meters in 1973 to 12 billion cubic meters in 1974, Syria called into question the role Turkey played in reducing the volume of flow.[258]

The shift in the narrative of the conflict between the states mirrored a shift in goals. During the initial phase, the Iraqi goal had been to pressure Syria to release additional flow by means of pan-Arab political pressure and military threat. As the legitimacy of the Syrian regime still lay primarily in its Arab nationalist credentials, undermining these credentials by painting Syria as outside the Arab consensus would have been very damaging to the Syrian regime. The Syrian goal had been to protect against Iraqi aggression – particularly threats to bomb the Tabaqah dam – and to undermine the Iraqi narrative using any and all means possible. In this way, the pre-June conflict as portrayed in the media was less about hydrology than it was about establishing an Arab consensus. Iraq's early efforts at diplomacy and exercise of Arab symbols in the media had lead the Arab League committee to favor Iraq, even though Syria would not abide by the technical committee's recommendations.

If the pre-June crisis narrative was concerned with Arab consensus, the second phase concerned international law and precedent. During the initial discussion of flow in mid-May, both Iraq and Syria drew upon international law, claiming that the other state denied its right to use an equitable share of the Euphrates River waters. The Iraqi view was that Syria was withholding water behind the Tabaqah dam in excess of Syrian need, while the Syrian view was that Iraq laid claim to all the flow entering Syria from Turkey.[259] The statements by Mukkaram al-Talabani and Subhi Kahhalah represented the differing approaches to flow

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[256] 'Minister replies to Iraqi Irrigation Minister statement', Damascus, Damascus Domestic Service, 15 June 1975, in FBIS-MEA-75-117 on 17 June 1975, accessed 22 January 2013.
[257] Ibid.
[258] Ibid.
[259] 'Minister refutes Iraqi falsehoods on Euphrates water', Damascus, Damascus Domestic Service,7 May 1975, in FBIS-MEA-75-089 on 7 May 1975, accessed 22 January 2013.

allocation that would define the negotiation over a final settlement of flow allocations of the Euphrates River.

After weeks of quiet diplomacy, Syria disclosed on 30 July 1975 that the city of Aleppo was experiencing a water shortage associated with the release of 450 cubic meters per second of flow at the Tabaqah dam.[260] As conditions in Aleppo worsened, it became clear that Syria and Iraq were engaged in a zero-sum competition for a finite quantity of water. The Iraqi response was to cast aspersions on the Syrian claims:

> "It is known that the pumping station which supplies Aleppo with water was set up on the Euphrates River before the construction of the At-Tabaqah Dam. It was designed to function on the normal level of the Euphrates River."[261]

The real rationale for the emergence of the crisis in Aleppo, according to the Iraqi view, was a Syrian ploy to once again reduce Euphrates River flows during the winter growing season.[262] Through narratives of Syrian victimization or Syrian falsehoods, both sides were posturing for a final push in the Saudi mediation effort. Over the course of August 1975, Saudi shuttle diplomacy involving both Sheikh Yamani and Saudi crown prince Fahd ibn Abd al-Aziz emerged with renewed fervor.[263] While speculation of an agreement between the parties was rampant throughout August 1975, it wasn't until October that airline service between the two states was re-established.[264] While on 18 October 1975 the Arab League "lauded the continued Saudi efforts to mediate between the two countries for the sake of reaching a permanent solution to [the Euphrates River] issue,"[265] no official announcement of an accord between the states was ever made. While the agreement was never made public, it is rumored that Iraq and Syria settled on a proportional allocation of the Euphrates River flow

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[260] 'Official speaks on Euphrates water crisis', Damascus, Syrian Arab News Agency, 30 July 1975, in FBIS-MEA-75-148 on 31 July 1975, accessed on 22 Jaunary 2013.
[261] 'Notes exchanged with Syria on al-Bakr Speech', Baghdad, Iraqi News Agency, 13 August 1975, in FBIS-MEA-75-156 on 12 August 1975, accessed on 22 January 2013.
[262] Ibid.
[263] 'Reportedly Mediating Euphrates Dispute', Cairo, Middle East News Agency, 11 August 1975, in FBIS-MEA-75-156 on 12 August 1975, accessed 22 January 2013.
[264] 'Syrian airspace reopened to Iraqi civil aircraft', Cairo, Middle East News Agency, 18 October 1975, in FBIS-MEA-75-203 on 20 October 1975, accessed 22 January 2013.
[265] Ibid.

entering Syria from Turkey: Syria purportedly receives 42% of the flow, while Iraq receives 58%.[266]

Section 5.4 Military Mobilizations

As the negotiations failed in April and May and as the rhetoric between the states became more vitriolic, so too became the military provocations. On 24 July 1975 Iraq lodged a formal complaint with Syrian officials over "feverish encroachments and provocations against the revolution in the Iraqi region by its traitorous stances and hostile attitudes to our people and the Arab nation".[267] For its detail, the Iraqi News Agency report on the complaint is worth quoting at length:

> "The protest memorandum says that on 27 February 1975, a Syrian military vehicle was parked 100 meters from the Iraqi Artimi post and its occupants opened fire on that post. On 28 April 1975, military reconnaissance planes penetrated the airspace over the Iraqi border bear the Jaribah post. They also flew over the Iraqi-Syrian border area in the Bir area.
>
> The protest note indicates that on 6 May 1975, a Syrian shepherd revealed information to the commander of the Iraqi Kani Attar post to the effect that a Syrian intelligence officer called Abu Ziyad asked the Syrian shepherds to graze their flocks near the Iraqi border to uncover information about the Iraqi side. Another intelligence officer with the rank of major also met with the shepherds for this purpose.
>
> The note also points out that four Syrian warplanes penetrated Iraqi airspace in the western area flying at low altitude on 10 May 1975. The same planes flew over the Iraqi district of Karabilah. A military plane also flew over the Iraqi border in the direction of Rabiyah. The note explains that a Syrian border officer prevented contractor Salim Muhammad as-Zaydan, who is building the Abu Wana post, from doing his work. The Syrian authorities instructed the Syrian Camel Corps to continue

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[266] Aaron T. WOLF and Joshua T. NEWTON, 'Transboundary Freshwater Dispute Database: Case Study of Transboundary Dispute Resolution: the Tigris-Euphrates basin' Oregon State University (web page) (2007) http://www.transboundarywaters.orst.edu/research/case_studies/Tigris-Euphrates_New.htm

[267] 'Complaint lodged with Syria against encroachments', Baghdad, Iraqi News Agency, 24 July 1975, in FBIS-MEA-75-144 on 25 July 1975, accessed 22 January 2013.

to prevent work on this post on the grounds that it is located within Syrian territory. The note also points out that the Syrian authorities set up wooden barricades on the Abu Wana hill and other barricades in the village of Safiyah.

The protest note goes on relating and exposing the encroachments and provocations perpetrated by the Syrian regime against the Iraqi border and areas. It points out that four MIG planes penetrated Iraqi airspace and flew over the district of Al-Qaim, western Iraq, at 1020 on 24 May 1975. Later, another Syrian plane flew over the Iraqi Kani Attar post and two other planes flew over the same area. A Syrian military committee with a number of Syrian engineers in four vehicles were seen near the Kani Attar post.

The Syrian forces stationed in the Armaylan area of the Syrian Al-Malikiyah District were reinforced with three armored cars, while a military force estimated at two companies supplied with antiaircraft artillery was deployed among the trees in the area.

The note affirms that two Syrian military planes penetrated Iraqi airspace at 1200 on the same day by flying over the Al-Qa'im district and heading for Al-Jazirah within Iraqi territory. Two Syrian military planes also flew over the said district and headed for Al-Jazirah on 11 May 1975. Two other planes flew over the Iraqi Juraybah post on 13 June 1975, and another military plane flew over Tell Safuk and the Juraybah post on 18 June 1975.

The note also reveals that the Syrian authorities mobilized two armored brigades, Nos. 15 and 30, in the Syrian Ash-Shidadi District, and deployed a large number of rockets. It points out that a Syrian military plane penetrated Iraqi airspace in the area of the Al-Qa'im district at 0940 on 28 June for a distance of 9 kilometers in parallel with the Euphrates River, while another plane at 1030 on the next day penetrated the Iraqi border over the Tell Safuk post.

On 2 July, a Syrian MIG plane penetrated Iraqi airspace over the Juraybah post. Another MIG plane flew over the said post at 0930 on 4 July 1975 penetrated Iraqi airspace, and then headed for the border post of Umm Jarbas.

In concluding the note, the Iraqi Government called on the Syrian authorities to put an end to such encroachments in the future."[268]

The incidences of Syrian military provocation – with a number of provocations by the Iraqi military also reported – clearly illustrate the military will surrounding the Euphrates River crisis. These mobilizations are even more dramatic when put into the context of Arabism's prohibition on inter-Arab military conflict and the ongoing Arab-Israeli conflict. While Arabism dictated that the military mobilizations of Arab confronting Arab should not have occurred at all, the mobilization of Syrian forces at the Israeli border and their redeployment near the Iraqi border clearly demonstrates the seriousness with which Syria received Iraq's threats to destroy the Tabaqah dam.[269] The majority of the provocations cited occurred throughout May and early June, when tensions between the parties reached their peak.

Syrian-Iraqi relations had been tense since the 1966 coup in Syria; however, cooperation during the 1973 October war had lead to closer ties after the war. Calls from Egypt and other Arab states for Syria and Iraq to form a unified northern front against Israel were realistic, and Syria even went so far as to offer unification of the states following the 1973 October war. The Euphrates River crisis, however, extinguished whatever flame of brotherhood might have flared during this brief renaissance of Arab unity. As late as August 1975, an exchange of notes between the countries over a speech by President al-Bakr saw Syria question, "what guarantee is there that Iraq will continue to shoulder its responsibility towards [a unified northern front with Israel]?"[270] The subtext of the Syrian message was clear: Iraqi military operations within Syria, even joint operations against Israel, were no longer possible given the lack of trust that had developed between the states over the course of the Euphrates River crisis.

Section 5.5 Conclusion

The 1975 Euphrates River crisis was an inter-state water conflict played out within, and periodically right at the limit of, the confines of the norms of Arabism. While the military

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[268] 'Complaint lodged with Syria against encroachments', Baghdad, Iraqi News Agency, 24 July 1975, in FBIS-MEA-75-144 on 25 July 1975, accessed 22 January 2013.
[269] GLEICK, YOLLES, HATAMI, Op. Cit. 13.
[270] 'Notes Exchanged with Syria on al-Bakr Speech', Baghdad, Iraqi News Agency, 13 August 1975, in FBIS-MEA-75-158 on 14 August 1975, accessed 22 January 2013.

conflict between Syria and Iraq was limited to troop mobilizations along their shared border and periodic incursions by military aircraft, these actions nonetheless challenged the established Arab norms prohibiting inter-Arab war. Iraq and Syria relegated the Arab-Israeli conflict and the Palestinian question to secondary status and pursued inter-Arab military confrontation.

While the military confrontation never coalesced into war, the conflict in the media was intense. Iraq publicly denounced the Syrian regime's stance on flows in the Euphrates River downstream from the Tabaqah dam. By portraying Syria as the disinterested punisher of 3.5 million Iraqi peasants, Iraq showed Syria to be outside the acceptable behavior of an Arab state. For its part, Syria questioned Iraq's commitment to Arab solidarity in the face of the Israeli threat, criticized Iraq's ceding of control over the Shatt-al-Arab to Iran, and even drew upon the 1955 Baghdad Pact when suggesting that the Iraqi army overthrow the government. Syria released additional flow from the Tabaqah dam at the start of June 1975, thereby ending the immediate crisis. It was only afterwards that the public debate turned to hydrology and a long-term settlement. While the final Saudi-mediated 'permanent solution' between Iraq and Syria was never made public, rumors indicate that the states divided the flow in the Euphrates River such that Syria received 42% and Iraq 58% of flow entering Syria from Turkey.[271]

[271] WOLF and NEWTON, Op. Cit.

Chapter 6 Conclusion

The search for links between interstate conflict and water scarcity requires a paradigm shift to incorporate emerging concepts of water scarcity. Water scarcity tends to be conceived of as a long-term condition, the accumulation of a set of criteria – systemic water deficit and socio-economic indicators – that combine to make some states water scarce. Hypothetically, water scarcity would also make these states more prone to water conflict. However, if we search for links between interstate water conflict and "many of the factors traditionally considered to be relevant indicators of international conflict, and of water conflict in particular,"[272] no particular correlation emerges.

This paper suggests that interference from mitigating factors dooms studies using a traditional definition of water scarcity to failure. Using virtual water, states can overcome pressures posed by baseline indicators of water scarcity, such as per capita fresh water endowment, water deficit, upstream dams, interstate relations, and economic constraints. In brief, inter-basin water transfers prevent states from being forced to address intra-basin water deficits and the conflicting interests among co-riparians. Realized water scarcity at the state level, derivative from these same baseline indicators, only occurs when virtual water trade cannot be used to compensate for water deficits. Virtual water, in turn, only ceases to mitigate water deficits when global food markets experience a crisis. As global food markets have functioned smoothly over long periods of time, realized water scarcity at the state level has been exceedingly rare. Therefore, identifying global food crises may be the first step in analysis of the causal links between water conflict and realized water scarcity.

It is only by looking at events concurrent with the periodic crises in global food markets that we get a clear picture of how states react to realized water scarcity. In the 1975 Euphrates River crisis, global food markets suffered from both supply and demand shocks, resulting in massive increases in the price of food staples, particularly wheat. The 1972-74 global food crisis coincided with a precipitous decline in Iraqi domestic wheat production and a multi-year drought in the Euphrates River basin. The unilateral development of dams upstream acted to exacerbate the tensions by creating uncertainty in Iraq as to whether decreased flow

[272] YOFFE, FISKE, GIORDANO et al., Op. Cit. 8.

in the Euphrates was due to drought or due to hydropower operations in Syria and Turkey. By engaging in heated conflict over the allocation of the Euphrates River in 1975, Iraq and Syria behaved exactly as we would expect states in an anarchical society to behave when in competition for limited resources.

Analysis of the 1975 Euphrates River crisis suggests that interstate water conflict should be viewed in the context of cultural norms of interaction between the parties to the conflict. The norms of the Arab-Israeli conflict, at least until Israeli hegemony became blatantly evident in the 1970s, permitted and perhaps preferred violent interstate interactions. With the Middle East being one of the driest regions on Earth, it is hardly surprising that 30 of 37 violent interstate interactions over water involved Israel and its Arab neighbors.[273] The norms of Arabism, on the other hand, officially preferred peaceful settlement of disputes, or at worst the absence of overt military conflict between Arab states. In this sense, the military mobilization by Syria and Iraq to their shared border during 1975 represents an exceptional challenge to prevailing Arab norms. Such a challenge to prevailing norms attests to the extremely high degree of conflict between Syria and Iraq in 1975.

[273] WOLF, YOFFE, and GIORDANO, Op. Cit. 39.

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