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Challenge of Global Resource Scarcity*

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## Foreword

Scott P. Stedjan

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# Penn State

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### FOREWORD

*Scott P. Stedjan*

In 1980, the libertarian economist Julian Simon made a bet with biologist Paul Ehrlich, who gained significant notoriety after the 1968 publication of his book *The Population Bomb*, warning of the dangers of overpopulation. Simon bet Ehrlich that the price of five metals—chrome, copper, nickel, tin, and tungsten—would decrease by the year 1990.<sup>1</sup> Ehrlich took the bet, confident that the drastic increase in human population over the decade would lead to more demand for these finite materials and would cause the prices to rise. Although the population increased by 800 million in the 1980s, the prices of the five metals in 1990 decreased by about fifty percent since 1980 and Simon won the bet.<sup>2</sup>

Although Simon may have gotten lucky, we should not miss drawing an important lesson from this infamous wager. Competition and human ingenuity have the potential to greatly impact both the supply and demand for all sorts of commodities, be it energy, food, water, or less crucial items. Just as Malthus' predictions of catastrophe were swept away by the Industrial Revolution and Ehrlich's prediction of mass starvation in the 1970s and 80s in *The Population Bomb* was disproved by the innovations of Green Revolution,<sup>3</sup> new technologies have the potential to, once again, save

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<sup>1</sup> John Tierney, *Betting on the Planet*, N.Y. TIMES MAGAZINE, Dec. 2, 1990, <http://www.nytimes.com/1990/12/02/magazine/betting-on-the-planet.html>.

<sup>2</sup> Paul Sabin, *Betting on the Apocalypse*, N.Y. TIMES, Sept. 7, 2013, <http://www.nytimes.com/2013/09/08/opinion/sunday/betting-on-the-apocalypse.html>.

<sup>3</sup> Jack A. Goldstone, *The New Population Bomb, The Four Megatrends That Will Change the World*, FOREIGN AFFAIRS, Jan./Feb. 2010,

the world from impending disaster. With food<sup>4</sup> and oil<sup>5</sup> prices on the decline and the rise of the United States as a world leader in energy production, policymakers and news organizations (with some exceptions) seem to have moved beyond the issue of global resource scarcity. However, it is also important to remember that the past is not always predictive of the future, and recent technological advancements may have only delayed disaster. Climate change and political inertia have the potential to stretch humanity's ability to invent and invest its way out of looming catastrophes. Although the threats posed to human civilization by the steady exhaustion of the world's finite resources will continue to morph in the decades to come as new technologies emerge and market conditions change, the dangers posed by climate change require policymakers to not lose focus.

The articles in this volume derive from the February 7, 2014 symposium hosted by the *Penn State Journal of Law and International Affairs* entitled "The Nine Billion People Question: The Challenge of Global Resource Scarcity," and are intended to warn against this inattention. The title of the symposium was taken from a special report published in *The Economist* magazine in 2011 and refers to the fact that the world's population will likely grow from around seven billion to over nine billion people by 2050.<sup>6</sup> The goal of the symposium was to bring scholars, policymakers, and practitioners together to discuss the challenges raised in *The Economist's* report and

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<http://www.foreignaffairs.com/articles/65735/jack-a-goldstone/the-new-population-bomb>.

<sup>4</sup> According to the Food and Agricultural Organization's Food Price Index, all food except meat has fallen sharply in 2014. The Food Price Index, which is the average of indices of the five staple food groups, has fallen from its high of 229.9 in 2011 to 188.6 in December 2014. *FAO Food Price Index*, FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, <http://www.fao.org/worldfoodsituation/foodpricesindex/en/> (last updated Jan. 8, 2015).

<sup>5</sup> Oil prices at the end of 2014 were at a five-year low. *IAEA Market Report December 2, 2014*, INTERNATIONAL ENERGY AGENCY, <https://www.iea.org/media/omrreports/fullissues/2014-12-12.pdf>.

<sup>6</sup> *Feeding the World: The 9 billion-people question*, THE ECONOMIST, Feb. 26, 2011, <http://www.economist.com/node/18200618>.

similar articles addressing the potential crises caused by drastic increases in the demand for food, energy, and water.

The *Journal of Law and International Affairs* is a multi-discipline journal, and the essays in this collection fit that mold. The first two essays in this collection address the geopolitics of natural resource scarcity. Professor Kent H. Butts of the Pennsylvania State University and the Center for Naval Analysis provides analysis of the importance placed on gaining and maintaining access to natural resources by nation-states throughout the twentieth and twenty-first centuries. Professor Michael Klare, Professor of Peace and World Security Studies and Director of the Five College Program in Peace and World Security Studies at Hampshire College, builds upon Professor Butts' analysis in his exciting essay by applying the lessons learned from history to the new geopolitics of energy. Klare, who has long been a leading voice sounding the alarm bells on the impacts of peak oil and resource scarcity, examines the extraordinary and unexpected shift from scarcity to what the CEO of ExxonMobil calls the "new Era of Abundance."<sup>7</sup> What this new era will bring to energy geopolitics is still largely unknown. Yet, Professor Klare warns that "while there has been some alteration in the global policy landscape, conflict over energy continues to convulse international affairs."

Professor Bryan McDonald's essay sets the stage for the next six essays that specifically address the global food system. Professor McDonald, a historian at the Pennsylvania State University, maps the global food system through history and argues that if the societies of the world are to effectively feed themselves in a sustainable way, we must understand how global food networks currently operate and how these networks can and should evolve to address interactive sets of threats and vulnerabilities. Professor Carmen Gonzalez's contribution adeptly moves from the local to the global levels of food

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<sup>7</sup> Rex Tillerson, *Capitalizing on the Coming Era of Energy Abundance*, Address to Texas Alliance of Energy Producers, (Apr. 2, 2013) (transcript available at <http://corporate.exxonmobil.com/en/company/news-and-updates/speeches/capitalizing-on-coming-era-of-energy-abundance>).

insecurity issues and argues “food insecurity is a function of global economic order that systematically disadvantages poor farmers in developing countries.” Professor Gonzalez, who is a Professor of Law at the University of Seattle, proposes six steps affluent countries can take to relieve the misery that the international order inflicts on small farmers throughout the world. These steps range from proactive investment opportunities to reform of the current trade regime so that the benefits and risks of food production can be allocated in a more just way.

The following two articles by a leading scholar and a practitioner address global food and agricultural assistance. Although nominally a humanitarian instrument, food aid remains essentially a political tool used by governments to further geopolitical ends. Professor Erin Lentz of the University of Texas at Austin acknowledges the political role of food aid, but argues that governments now have a real opportunity to reform food assistance to make it fit for its primary purpose—to save lives and build resiliency. Key to this opportunity, Professor Lentz contends, is a greater understanding about the long-term effects of undernutrition in the first 1000 days of life. Marc Cohen, senior researcher at Oxfam America, builds off Professor Lentz’s analysis and addresses the Feed the Future Program of the United States. Dr. Cohen welcomes the new approach to agricultural assistance being employed by the United States, but argues based on field research conducted in Haiti, Senegal, and Tanzania that “more consistent effort to draw on farmers’ own knowledge and definitions of problems in [Feed the Future] programming would improve the initiative’s result.”

The World Trade Organization (WTO) and the international trade system will play a key role in shaping the future of global natural resource management. In their essay, Terrance P. Stewart and Stephanie Manaker Bell, both attorneys working on trade issues for the firm Stewart and Stewart, comprehensively explain how the WTO has addressed food insecurity throughout its history and argue that the “international community must continue to examine how trade rules influence food security issues and how they can be modified to

ensure that the evolving needs of the global community are met.” Professor David Blandford of Penn State provides an economists view of the current international trade regime, with a specific focus on the Agreement on Agriculture. Professor Blandford contends that although the existing WTO disciplines on agriculture, and proposals to strengthen these, are far from perfect, they are on the right track and warns against loosening these disciplines in the future should new trade conflicts emerge as a result of global resource scarcity.

As the essays in this volume demonstrate, the importance of ensuring that the earth can support nine billion people cannot be overstated. With such threats potentially looming, we cannot sit back and hope that technology will save humanity and the earth once again. Strategies are required, resources must be marshaled, and political will must be mobilized. Our goal in holding the symposium and publishing this edition of the *Journal of Law and International Affairs* was to educate, challenge, and to some extent, compel readers to take action so that, in an earth crowded with nine billion people, there will be room for us all to pursue healthy and prosperous lives. I hope we have achieved at least one of those goals.