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United States Marine Corps
Command and Staff College
Marine Corps University
2076 South Street
Marine Corps Combat Development Command
Quantico, Virginia 22134-5068

MASTER OF MILITARY STUDIES

TITLE:

The Emergence of Climate Change as a U.S. National Security Objective, and How Secretary Kerry's Personal Diplomacy and Leadership Impacts the Global Climate Agreement

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF MILITARY STUDIES

AUTHOR:

Vansin Christopheré Dokken

AY 15-16

Mentor and Oral Defense Committee Member: Dr. Matthew J. Flynn

Approved: MATTHEW FLYNN 

Date: _____

3/25/16

Oral Defense Committee Member: John W. Gordon

Approved: 

Date: 3/25/16

Executive Summary

Title: The Emergence of Climate Change as a National Security Policy, and How Secretary of State John Kerry's Personal Diplomacy and Leadership Prepares the Department of State to Lead the International Community to Reach the First-Ever Global Climate Change Accord in Paris, France, 2015.

Author: Vansin C. Dokken

Thesis: The thesis answers the question, "what is the best strategy to advance a U.S. foreign policy on climate change?" The answer is leadership from the President of the United States and his chief foreign policy advisor, John Kerry, the Secretary of State. Secretary Kerry's personal diplomacy and leadership raised public awareness about the danger of climate change and prepared the employees of the Department of State to lead the international community to reach a global climate change accord in Paris, France, December 2015.

Discussion: *The Guardian* called the "Paris climate change agreement: the world's greatest diplomatic success."¹ Secretary Kerry's leadership shaped the 2015 Paris accord, but he could not overcome the U.S. Senate's objection to the accord. The President was probably aware of the objection by the U.S. Senate to a climate change treaty, and therefore he used the executive order to advance a U.S. foreign policy on climate change. The Paris Accord is likely to face resistance from the U.S. Senate and Supreme Court.

Conclusion: Climate change is an urgent national security issue. It contributes "to increased natural disasters, refugee flows, and conflicts over basic resources like food and water" according to the *2015 National Security Strategy*.² Unlike other national security challenges, the world's greatest military cannot solve climate change, but it can prepare its forces to assist with the increase of man-induced natural disasters. The former commander of the U.S. Pacific Command, Admiral Samuel J. Lockler III, thinks that climate is likely to "cripple the security environment, probably more likely than other scenarios we all often talk about" such as North Korea and China.³ Admiral Lockler continued, "The island of Tarawa in Kiribati, they're contemplating moving their entire population to another country because [it] is not going to exist anymore."⁴ If a disaster were to strike in his area of responsibility, the Admiral predicts, "Hundreds of thousands or millions of people displaced and then security will start to crumble pretty quickly."⁵ The U.S. armed forces, he said, is reaching out to regional military about this issue.⁶ The leadership at the Command and Staff College should expand its elective courses to include civilian-military assistance strategy to prepare for such events and further analyze the whole-of-government approach to facilitate large-scale evacuations during man-induced natural disasters.

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Preface

The American public has little appetite for foreign policy. In the recent past, foreign policy has frequently become associated with the Benghazi security failure, the rise of the Islamic State of Iraq and the Levant (ISIL), the continuing Syrian civil war, the comprehensive agreement on the Iranian nuclear program, and a host of other politically charged topics. The difficulty of grasping foreign policy is further compounded its remoteness on foreign soil that were frequently framed without the benefit of context and data, thus resulting in more confusion and partisan politics. Even when foreign policy finds its way into contemporary headlines, the subject trails the economy, health care, immigration, education, and a host of other domestic issues as an important topic of discussion.

In 1989, President George H. W. Bush realized the legacy of Ronald Reagan by orchestrating “a peaceful unwinding of the Cold War that united Germany with the West,” and “a Europe divided became whole and free.”⁷ Millions benefited from a free and whole Europe. The ending of the Cold War was one of America’s finest hours in diplomacy, yet few cared. Instead of praising the President for foreign policy successes, the public scorned President Bush because he raised taxes. During reelection, the public sentiment toward President Bush was summarized by his opponent’s slogan: “It’s the economy, stupid.” George H.W. Bush, who had a record of accomplishment in foreign policy, was out of job after one term as president.

Foreign policy success is hard work, and it requires good leadership to start. When President Obama elevated climate change to a national security priority, he needed a leader who had the Ronald Reagan-personal touch. President Obama selected John Forbes Kerry. Like the great communicator Ronald Reagan, Kerry has used personal diplomacy to establish relationships before advancing President Obama’s foreign policy goals. Kerry believes that

personal diplomacy “strips away all the folderol, all the hoopla and protocol junk, and kind of makes it personal. A person comes into your home, you break bread.”⁸ At the Department of State, Kerry used emails, cables, speeches, and meetings to underscore the importance of climate change to all employees. Despite his busy schedule, the Secretary has never failed to stop by and chat with the children of America’s diplomatic corps during the “bring your child to work” event. This personal touch, both with world leaders and employees of the Department of State, has enabled Secretary Kerry to achieve success both at home and abroad.

Kerry’s personal diplomacy does little to convince the U.S. Senate to accept that climate change is real. The majority of the U.S. Senate has refused to accept that climate change poses a real threat to America’s national security and has promised to block any presidential initiative.⁹ In so doing, the majority of the U.S. Senate’s leadership has encouraged the President to exercise executive agreements that has no oversight from the U.S. Senate. As a former Chairman of the U.S. Senate Foreign Relations Committee, Secretary Kerry should have stepped in to encourage both sides to work together for the greater good of the country. Perhaps it is not the job of the Secretary of State to offer advice to his boss. After all, history has showed “executive agreements have outnumbered treaties by nine to one” since 1939.¹⁰

It is time for both parties and both branches of the government to put political ideology aside to consider the greater good for the country and the American people.

Acknowledgments

I dedicate this thesis to my daughters, nieces, and nephews as well as those in their generation, and I hope they will inherit a healthy, prosperous country free from pollutants and human-induced disaster. It is with this hope that I am committed to follow the climate change data and find the truth behind climate change politics.

I am indebted to my family, colleagues, and friends. To my wife for encouraging me to follow the path to higher education, and to my daughters for making life fun, loving, and memorable; also to my mom, in-laws, sisters, brothers, nieces, and nephews for their love and support.

My colleagues at the Department of State and classmates at the U.S. Marine Corps Command and Staff College have provided me with immense repository of knowledge for personal and professional development. I am indebted to them. Their combined wisdom has taught me the value of hard work, the integrity to do the right thing, and a proper attitude to make a positive impact in society.

I received invaluable help from my thesis advisor Dr. Matthew Flynn who guided me to follow all data paths to reach the paper's natural conclusion. I benefited immensely from Dr. Flynn's comments and suggestions.

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Abstract

President Obama has elevated climate change to a national security priority, initiated a series of executive orders to green the U.S. government, and set the stage for Secretary of State John Kerry to work out a climate change accord in Paris, France, 2015. Secretary Kerry did not disappoint the President. Upon becoming the 68th Secretary of State in February 2013, he used personal diplomacy and leadership to educate the public about the danger of climate change to national security as well as rallying, preparing, and leading the employees of the Department of State to negotiate the most aggressive accord possible to combat climate change. Secretary Kerry's personal diplomacy and leadership is an excellent case study in using diplomacy to advance national interest.

Introduction

This is huge: Almost every country in the world just signed on to the #ParisAgreement on climate change-thanks to American leadership. President Obama

<https://twitter.com/BarackObama>, 12 December 2015

The #ParisAgreement gives us the chance to secure a healthier, more prosperous future for the next generation. President Obama

<https://twitter.com/BarackObama>, 16 December 2015

This paper details the emergence of climate change as a key national security objective of the United States. Further, it provides behind-the-scene descriptions of Secretary of State John Kerry's usage of personal diplomacy and leadership to prepare America to work with the international community to construct a climate change agreement at the Conference of the Parties 21 (COP21) in Paris, France, on December 12, 2015.

The phrase "climate change" first appeared in the George H.W. Bush's administration, and since then the phrase appears, disappears, and reappears in the subsequent administrations of William "Bill" Clinton, George W. Bush, and Barack Obama. The paper stresses the need for personal leadership to influence diplomacy. This effort encompasses much of the government and gets beyond the president and his National Security Strategy. The Department of State, not surprisingly given the topic of climate change, plays a key role in this strategic diplomatic effort for the United States. This obvious step is not so obvious given a history of this country's minimal understanding of the Department of State's foreign policy function and peace efforts. The climate change initiative, in the hands of the current president, has empowered that department to perform, as it should, although the personal leadership of the head of State plays a

key role. Ultimately, picking the right people is key to effective leadership, and President Obama made this call by appointing John Kerry to the Department of State. Personal diplomacy and leadership has never been more on display at any time during the illustrious diplomatic history of the United States.

The paper consists of five distinct sections showing the history and context, and elevation of climate change to a national security priority. The first section starts with the United Nations recognizing climate change as a shared global problem and organizing an international convention to explore, discuss, and search strategies to combat the new threat. The second section highlights the emergence of climate change when it was recognized during the George H.W. Bush and subsequent administrations of Bill Clinton, George W. Bush, and Barack Obama. The third section looks at Secretary of State John Kerry's personal diplomacy and leadership in preparation for America to lead and achieve a global climate change agreement in Paris, France, December 2015. The fourth and fifth sections provide conclusions and implications of the paper, respectively.

United Nations Recognizes the Danger of Climate Change

The United Nations recognized climate change as an international problem in 1969 and agreed to convene the international community to explore and provide actionable guidelines on the emerging topic. The international community also created a global scientific body to study and collect data on the topic and to learn about the potential adverse impact on the planet and its population.

A polluted planet alters the earth's ecosystems and threatens all life on every continent. This recognition galvanized the United Nations General Assembly in 1969 to convene a conference to discuss and provide actionable guidelines for the international community.¹¹

Three years later in 1972, the world community met in Stockholm, Sweden, to discuss “the need for a common outlook and for common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment.”¹² The 1972 Stockholm Conference produced a declaration that called upon all “governments and peoples to exert common efforts for the preservation and improvement of the human environment, for the benefit of all the people and for their prosperity.”¹³ Subsequent actions to raise global awareness and reduce greenhouse gas emissions included the 1985 Vienna Convention for the Protection of the Ozone Layer, the 1987 Montreal Protocol on Substance of the Depletion of the Ozone Layer, and the 1992 United Nations Framework Convention on Climate Change (UNFCCC). UNFCCC, also called the 1992 Rio Earth Summit, set the framework for future climate change initiatives to minimize excessive greenhouse gas emissions.

The scientific community agrees that human activities accelerate climate change. Hundreds of scientists working at the Intergovernmental Panel on Climate Change (IPCC) have produced a series of reports on climate change for the United Nations since 1988.¹⁴ Comprised of global scientists representing different areas of expertise, IPCC researchers draw on the work of thousands of additional specialists to analyze climate change, examine its impact, and mitigate potential climate change implications. Endorsed by the United Nations General Assembly, IPCC’s scientific processes and analyses have served as the backbone for UNFCCC with the role to “assess on a comprehensive, objective, open and transparent basis the scientific, technical and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation.”¹⁵ The IPCC produces a series of climate change publications for policymakers and community leaders, but it does not provide policy-prescriptive measures for policy makers.¹⁶

In the IPCC report entitled, *Climate Change 2013: The Physical Science Basis*, hundreds of scientists concluded, “The science now shows, with 95 percent certainty, that human activity is the dominant cause of observed warming since the mid-20th century.” In its subsequent report, *Climate Change 2014: Synthesis Report Summary for Policy Makers*, scientists from the international community cautioned that, “warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia.” The report continued: “the atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen.” IPCC data indicates that the earth’s atmosphere contains an unprecedented high level of carbon dioxide, methane, and nitrous oxide that “are extremely likely to have been the dominant cause of the observed warming since the mid-20th century.” Although the earth is capable of disposing carbon dioxide through a natural process, it cannot dispose of the high volume of carbon dioxide emissions produced by large-scale global industry created by human activities.¹⁷

The U.S. National Aeronautics and Space Administration (NASA) supports IPCC analyses and conclusions. The space agency uses its satellites and instruments to record data on climate change, and NASA concludes that “the burning of coal, oil, and gas” likely causes the increase of the earth’s temperature.¹⁸ It further predicts the accelerated rise of the earth’s temperature that in turn decreases snow and ice levels causing the sea level to rise triggering more floods, leading to more droughts and heat waves, and changes rainfall patterns and growing seasons. Together, these changes cause negative environmental impacts on a global scale.¹⁹ Hundreds of scientists at IPCC, NASA, and other scientific research institutions agree that human-produced carbon dioxide is accelerating “long-term change in the Earth’s climate.”²⁰ This process is commonly known as “climate change.”

In Michael E. Mann's and Lee R. Kump's, *Dire Predictions: Understanding Climate Change*, the authors wrote, "if we continue on this course, we imperil our food and water supplies, the stability of our coastlines, the strength of our economy, our national security, and the health of our global environment."²¹ Gilbert Plass's *The Carbon Dioxide Theory of Climate Change*, Joseph Romm's *Climate Change: What Everyone Needs to Know*, Elizabeth Kolbert's *The Sixth Extinction: An Unnatural History*, and hundreds of other books come to similar conclusions. A minority of scientists disagree with these conclusions.

A public poll released by Pew Research in 2014 showed that "the vast majority (87 percent) of scientists said that human activity is driving global warming, and yet only half the American public subscribed to that view."²² Perception frequently drives policy. The public view expressed by "half of the American public" is supported by Chairman of the House Science Committee Lamar Smith (R-Texas), Chairman of the Senate Environment Committee Senator James Mountain "Jim" Inhofe (R-Oklahoma), Chairman of the National Republican Senatorial Committee Roger Frederick Wicker (R-Mississippi), and other Republican legislative members.

The principal arguments against climate change center on economic disadvantage.²³ Often times, politicians call on scientists who support their view to justify their position. Physicist S. Fred Singer, geographer Craig D. Idso, paleontologist Robert M. Carter, and Geologist Dedrick Robinson are among those with dissenting views. In Robinson's and Robinson's *Global Warming: Alarmists, Skeptics, and Deniers--a Geoscientist Looks at the Science of Climate Change*, the geologist and his law-trained son discuss climate change through a question-answer format that frequently focused on peripheral topics. For instance, the Robinsons discuss carbon dioxide as a pollutant instead of a principal gas that traps heat which,

in turn, is a cause of global warming.²⁴ The authors conclude, “There is a consensus in the media, the government and among politicians, but not among scientists.”²⁵ The authors provide no evidence to support this assertion. In Murray’s *The Really Inconvenient Truths*, the author attacks Al Gore and links Rachel Carson, who advocates minimal use of pesticides, to millions of deaths in Africa. Murray fails to link Rachel Carson to climate change; instead, he uses the example to vent his frustration about the green movement as a whole. The book lacks scientific evidence on the topic.²⁶ False cause, generalization, and circular reasoning appear too frequently in these books.

Climate-induced pollution kills people and destroys the environment. People in Delhi, Karachi, Dhaka, Dakar, Abu Dhabi, Doha, and many other large cities are living in an unhealthy environment with heavy pollutants, which kills millions and costs billions of dollars in health care support. The World Health Organization’s (WHO) 2012 data attributed 4.3 million deaths to disease from household air pollution.²⁷ In 2009, the U.S. Environmental Protection Agency (EPA) declared that greenhouse gas emissions threaten public health and public welfare.²⁸ The IPCC, WHO, and EPA provide the scientific foundation for the understanding of climate change, and it is up to each individual country and to multinational organizations to confront this global challenge. Appendixes A and B offer additional WHO data on the negative impact of climate change. In sum, the world faces a crisis and needs to act.

The Emergence of Climate Change as a U.S. National Security Policy

Climate change first appeared in the White House’s *1991 National Security Strategy* of President George H.W. Bush and became increasingly important in the Clinton administration’s *1995*, *1997*, and *1998 National Security Strategy* publications. Although President Clinton signed the 1997 Kyoto Protocol in 1998, the U.S. Senate did not ratify it. The topic of climate

change slowly faded away in George W. Bush's second publication of the National Security Strategy. The phrase "climate change" appeared once in George W. Bush's *National Security Strategy* and disappeared in the second *National Security Strategy*. This changed in 2009. Immediately after taking Office, President Barack Obama identified climate change as a national security objective, and started the Global Climate Change Initiative (GCCCI), setting the stage for Secretary of State Kerry to lead the international community to produce a climate change agreement signed by over 190 nations.

George H.W. Bush's 1991 *National Security Strategy* discussed the assessment and concerns of climate change.²⁹ On June 12, 1992, the Bush administration signed the UN Framework Convention on Climate Change, and the U.S. Senate ratified it on 15 October 1992.³⁰ The treaty required signatory nations to stabilize "greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."³¹ The Framework divided signatory nations into two categories: Annex I Parties consisting of developed and transition-to-market-economy nations and non-Annex I Parties consisting of all the others.³² In 1993, the *National Security Strategy* listed climate change as an environmental degradation that has far-reaching effects "on the capacity of countries to sustain economic growth and ensure a healthy environment for their citizens."³³

The emergence of climate change continued to appear in the White House's *National Security Strategy (NSS)* publications in the Clinton administration from 1993 to 2001. The 1994 *NSS* recognized the impact of climate change and called for strategic partnerships to focus on long-term strategic policy.³⁴ The following year the 1995 *NSS* amplified the importance of environmental issues and focused on financial assistance through the 1994 Global Environmental Facility to help poorer nations perform environmental impact analysis before undertaking any

developmental projects.³⁵ Two years later, the administration developed the *Climate Change Action Plan* with programs at home and abroad to help reduce greenhouse gas emissions.³⁶ In the *1998 NSS*, the Clinton administration confronted climate change head on by associating climate change with risks to the health of U.S. citizens, exploring new ways to further reduce greenhouse gas emissions, encouraging U.S. business and non-governmental organizations to focus on sustainable development projects and clean energy, and encouraging developed nations to ratify the 1997 Kyoto Protocol.³⁷ The *1998 NSS* discussed the importance of the Kyoto Agreement and encouraged China, India, and key industrialized nations to commit themselves to reduce greenhouse gas emissions.³⁸ Although the United States signed the Kyoto Protocol in 1997, it never ratified it, since the Senate objected to differences of climate change responsibilities between the developed and underdeveloped nations. The United States resorted to unilateral actions, in the form of executive orders, to combat climate change.

Citing the Kyoto Protocol as unworkable, the United States took two parallel actions via the Executive Branch and Legislative Branch. The Clinton administration led the greening effort in America. Signed between 1998 and 2000, President Clinton's Executive Orders 13101, 13123, 13134, 13148, and 13149 required federal agencies to take a series of steps to green the government through waste prevention, recycling, federal acquisition, efficient energy management, promotion of bio-based research and development, leadership in environmental management, and transportation efficiency. These activities were only the beginning of America's actions to reduce greenhouse gas emissions and reduce America's carbon footprint.

The U.S. Senate, however, appears unwilling to combat climate change. At the beginning, the U.S. Senate argued that the 1997 Kyoto Protocol's two-tiered system was economically disadvantageous to American companies. Later, the upper chamber argued that

climate change was a hoax. Finally, in 2015, 27 years after NASA scientists testified before its committee, the U.S. Senate voted 98-1 in a non-binding resolution stating, “Climate change is real and is not a hoax.”³⁹

Table 1: Executive Orders Related to Climate Change

President	Years in Office	Climate Change’s Executive Orders and Presidential Memorandums	Total Executive Orders Signed
Bill Clinton	Jan 20, 1993-Jan 20, 2001 (8 years)	13101 (Sep 1998) 13123 (3 Jun 1999) 13134 (19 Aug 1999) 13148 (21 Apr 2000) 13149 (21 Apr 2000)	364
George W. Bush	Jan 20, 2001-Jan 20, 2009 (8 years)	13423 (29 Mar 2007)	291
Barack H. Obama	Jan 20, 2009-Jan 20, 2017 (8 years)	13514 (5 Oct 2009) Presidential Memo (24 May 2011) Presidential Memo (2 Dec 2011) Presidential Memo (21 Feb 2012) Presidential Memo (24 May 2011) Presidential Memo (5 Dec 2013) 13693 (19 Mar 2015)	227 (end of 2015)

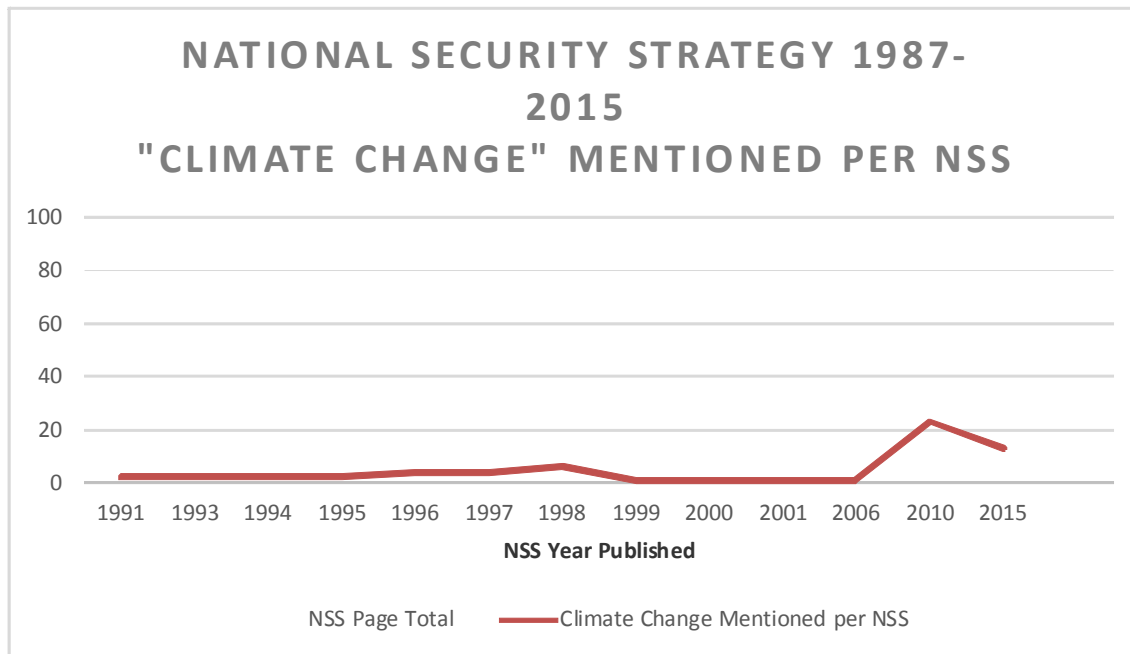
When elected to the Office of the President in 2001, President George W. Bush continued to “tie economic growth to the global efforts to stabilize greenhouse gas concentrations.”⁴⁰ Additionally, the President pledged to “reduce America’s greenhouse gas emissions relative to the size of our economy, cutting such emissions per unit of economic activity by 18 percent over the next 10 years, by year 2012.”⁴¹ Further, “committed to the basic U.N. Framework Convention for international cooperation”⁴² and “increased spending on research and new conservation technologies, to a total of \$4.5 billion—the largest sum being spent on climate change by any country in the world and a \$700 million increase over last year’s budget.”⁴³ In his second term, the president dropped climate change from the White House’s National Security Strategy. There has been a pattern of U.S. policy on climate change: both

Democrat and Republican administrations had advanced the subject of climate change even when there was little support from the U.S. Senate.

To put the 1997 Kyoto Protocol into perspective, 192 countries ratified the treaty to reduce greenhouse gas emissions that would have come into effect from 2005 to 2012. Presidents Clinton signed the treaty, but the U.S. Senate rejected it citing economic reasons. Afghanistan, South Sudan, Andorra, the Holy See (Vatican City), and Taiwan were the others rejecting the treaty. Since Andorra and the Vatican are observers, Taiwan is not universally recognized as a country based on China's objection, South Sudan is a new country with limited government infrastructure, and Afghanistan is busy fighting the Taliban insurgency, the United States unfortunately stands out as a non-Kyoto Protocol signer.

The core issue of the 1997 Kyoto Protocol for the United States centered on the difference of quantity of greenhouse gas emissions allowed by a developed United States and the amount allowed by developing countries such as China, India, Brazil, etc. Under the Kyoto Protocol, developing large economies have an unfair economic advantage over the United States. Further, the United States argues that combating climate change requires efforts by all nations, and that both developed and developing economies must do their fair share to cut greenhouse gas emissions based on their own national circumstances. Special Envoy for Climate Change Todd Stern's statement summarized the U.S. position as follows: "you need to start with all the major emitters, both developed and developing [nations], accounting for some 80 percent of global fossil fuel emissions and build out from there."⁴⁴ In 2010 at the Cancun Summit, the international community agreed to restrict all major economies, developed and developing, to implement their own targets in a transparent manner.⁴⁵ This was the beginning of convergence of an agreed strategy to combat climate change.

Figure 1: Climate Change Phrase in U.S. National Security Strategy 1991-2015



Leading to the 2009 Copenhagen Summit, the Obama administration launched the whole-of-government, three pillars Global Climate Change Initiative (GCCCI), “making low-emission, climate resilient sustainable economic growth a top priority for our diplomatic and development work.”⁴⁶ The first pillar is clean energy, which will “help put developing countries on a low-carbon path, decrease pollution globally, bolster international energy security by strengthening reliance on domestic and renewable resources and create increased trade and investment in clean technologies and new opportunities for U.S. business and workers.”⁴⁷ The second pillar is sustainable landscapes, which are “not only to limit climate change, but also to preserve the home of at least 80 percent of the world’s terrestrial species, including 70 percent of plants identified as having anti-cancer characteristics.”⁴⁸ Lastly, the third pillar is adaptation, “which means building resilience against extreme weather events to reduce the risk of damage, loss of life and broader instability that can result from extreme weather and climate events, such as droughts, floods, and extreme storms.”⁴⁹ Special Envoy Stern argues that these actions highlight

American leadership and responsibility, long-term U.S. strategic interests worldwide, and provide excellent investment opportunities. According to Special Envoy Stern, “the overall U.S. foreign operations budget is about 1% of the total U.S. government budget, and our climate change funding is only about 3% of that.”⁵⁰ The Special Envoy stresses the importance of a return on investment for a budget of three hundredth of a percent of one percent of the total U.S. government budget.

The Obama administration has continued to stress the importance of climate change heading into its second term. The *2010 National Security Strategy* acknowledges, “The danger from climate change is real, urgent, and severe.”⁵¹ In *President Obama’s Climate Action Plan*, the president states, “while no single step can reverse the effects of climate change, we have a moral obligation to future generations to leave them a planet that is not polluted and damaged.”⁵² The president continued, “through steady, responsible action to cut carbon pollution, we can protect our children’s health and begin to slow the effects of climate change so that we leave behind a cleaner, more stable environment.”⁵³ Five years later the *2015 National Security Strategy* elevated climate change to national security policy, framing climate change as “an urgent and growing threat to our national security, contributing to increased natural disasters, refugee flows, and conflicts over basic resources like food and water.”⁵⁴ The Obama administration is taking strong action to combat climate change by initiating a whole-of-government approach to combat that change by refocusing the U.S. economy on sustainable energy.

The President introduced Executive Orders 13514 and 13693 to green the federal government. EO 13514, signed 5 Oct 2009, further reduces greenhouse gas emissions for all federal agencies through the reduction of fossil fuel energy consumption and the protection of

the environment. On March 19, 2015, the President signed EO 13693, *Planning for Federal Sustainability in the Next Decade*, requiring federal government leadership in sustainability and greenhouse gas emissions reductions. EO 13693 will “promote building energy conservation, efficiency, and management by reducing agency building energy intensity measured in British thermal units per gross square foot by 2.5 percent annually through the end of fiscal year 2025, relative to the baseline of the agency's building energy use in fiscal year 2015 and taking into account agency progress to date.”⁵⁵ The executive order sets criteria to promote technology centered energy optimization and efficiency; increase clean energy consumption; optimize water use efficiency; and reduce fleet-wide greenhouse gas emissions from vehicles. EO 13693 has target metrics for all federal agencies to meet.

EO 13693 simplifies the new climate change requirements for all federal agencies by revoking previous executive orders and Presidential memorandums. The new order revokes President Bush’s EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, that required all “federal agencies to conduct their environmental, transportation, and energy-related activities under the law in support of their respective missions in an environmentally, economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner,” and further revokes EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, that expanded “on the energy reduction and environmental performance requirements for Federal agencies identified in EO 13423.”^{56,57} EO 13693 also annuls Presidential Memorandum of May 24, 2011 (*Federal Fleet Performance*), Presidential Memorandum of December 2, 2011 (*Implementing of Energy Savings Projects and Performance-Based Contracting for Energy Savings*), Section 1 of Presidential Memorandum of February 21, 2012 (*Driving Innovation and Creating Jobs in Rural America through Biobased*

and Sustainable Product Procurement), and Presidential Memorandum of December 5, 2013 (*Federal Leadership on Energy Management*).⁵⁸ The simplification provides one executive order with one standard of compliance for all federal agencies.

The executive order sets the stage for federal agencies to demonstrate energy and environmental strategy by example and achieve a clean energy economy. The approach to energy and environmental conservation provides a comprehensive vision with goals for improvements in greenhouse gas emissions, energy efficiency, water use efficiency, pollution prevention, and waste elimination, regional and local integrated planning, sustainable federal buildings, sustainable acquisition, electronic stewardship, and environmental management. Executive Order 13693 streamlines requirements for all federal agencies.

The Obama administration's climate change actions are producing results. In 2009, the administration committed the U.S. government to reduce U.S. GHG emissions by 17 percent below 2005 levels by 2020 and requires all federal agencies to take immediate actions to take carbon inventory, reduce the carbon footprint, and increase clean energy consumption. Additionally, the President struck a bilateral deal with President Xi Jinping of China in November 2014 to reduce U.S. GHG emissions by 26 to 28 percent by 2025.⁵⁹ Similarly, President Xi committed China to use 20 percent non-fossil fuel by 2030.⁶⁰ The commitments and actions of the world's worst polluters provided hope for the international community to meet and agree on a new climate change framework in 2015. Additionally, the United States collaborated with India to advance clean energy and low emission technologies. These discussions and agreements were championed by none other than Secretary of State John Kerry through his use of personal diplomacy.

Secretary Kerry's Personal Diplomacy Shapes the Global Climate Agreement

Secretary Kerry used personal diplomacy to prepare the United States for the 21st Conference of the Parties (COP21) of the United Nations Framework Convention on Climate Change (NFCCC) in Paris from November 30 to December 12, 2015. To achieve President Obama's vision to combat climate change, Secretary of State Kerry had a huge task before him: convince the American people that climate change poses a real security threat to the U.S. national security; galvanize and prepare the employees at the Department of State to achieve a global agreement that benefits all nations; and lead the international community to adopt the first-ever international climate agreement. As America's top diplomat, the success to reach the first-ever global agreement rested on Secretary Kerry's personal diplomacy. The *New York Times* suggested the international agreement is an accord, not a treaty that requires two-thirds of the Senate approval.⁶¹

Personal diplomacy is not new in the diplomatic realm. Professor Elmer Plischke contends that, "there has always been a certain amount of personal diplomacy by reigning sovereigns and other ranking government officials of the chief of state or head of government level" dating back as far back as 1280 B.C.⁶² The development of the modern state system provides far more opportunities for minor diplomatic professionals to engage in diplomatic work, thus there has been a decline in personal diplomacy.⁶³ Secretary Kerry reversed this trend, and used op-ed articles to present the topic of climate change and argued that America must act immediately before it is too late. Further, the Secretary aligned the *2015 Quadrennial Diplomacy and Development Review* with the President's *2015 National Security Strategy*, and zeroed in on climate change focusing on four initiatives: "strengthen staff understanding of and engagement in climate issues," "integrate climate change into all of our diplomacy and

development efforts,” “designate critical countries for in-depth climate engagement,” and “expand climate and clean energy diplomacy beyond capitals.”⁶⁴

Secretary Kerry has a long history of public service. After graduating from Yale in 1966, he enlisted in the U.S. Navy and volunteered to serve in Vietnam. He was honorably discharged in 1970 and became an outspoken advocate against the war.⁶⁵ The dualistic nature of strong military service and policy disagreement confounded many Americans when he ran as the Democratic Party candidate in 2004. In a conversation with Brinkley in 2003, Kerry stated, “I was more opposed to the war than ever, yet more compelled by patriotism to fight it. I guess until you’re in it, you still want to try it.”⁶⁶ Kerry’s opposition to the Vietnam War statistically pitted 50 percent of veterans against his presidential candidacy.⁶⁷ After an unsuccessful run for President, Kerry returned to public service at the U.S. Senate where he served as the Chairman of the Senate Foreign Relations Committee and the Small Business Committee before becoming the 68th Secretary of State.

Secretary Kerry consistently uses the op-ed medium and other means to communicate the American people. Kerry’s first op-ed article appeared in *Grist Magazine* or *Grist.org* on 19 June 2013, and the Secretary made the topic of climate change both urgent and personal.⁶⁸ Again, Kerry’s duality of his public service and activism come into full view, describing the environment as a central cause in his life as both an activist and now a public servant.⁶⁹ The Secretary wrote:

Everywhere I travel as Secretary of State, I raise the concern of climate change. I do so ... because it’s critical to the survival of our civilization, and that means it’s a critical mission for me as our country’s top diplomat.

Is it also personal to me? Of course it is. The environment has been one of the central causes of my life ever since I entered public life as an activist.

Today, people all over the world are demanding action on climate change, and those of us in positions of authority globally have a responsibility to lead the way toward progress.

So it is personal, absolutely — but leading the way is also the right role for the United States.

...

I am passionate about this, not based on ideology, but based on facts and based on science. It is not just people all over the world crying out for action — it is the very science that is screaming at us.

...

I hope you will share your thoughts and ideas on new climate initiatives we could undertake. If ever there was an issue that demanded cooperation, public participation, and committed diplomacy, this is it.

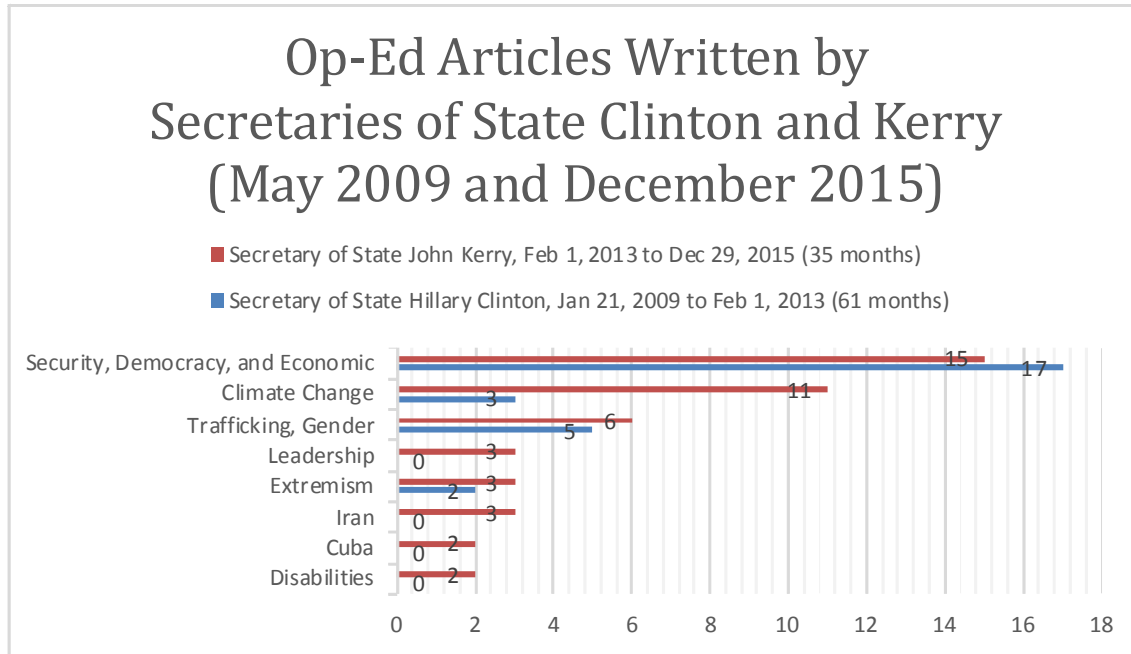
... I challenge you, to join us in that effort. For if we waste this opportunity, our failure may be the only thing our generations are remembered for.

Secretary Kerry's first op-ed highlights his personal diplomacy targeting the American people and the employees of the Department of State and underscores his commitment to lead the international community to combat the global threat of climate change that will negatively affect the American way of life and damage the entire planet. The Secretary's passionate op-ed article signaled the importance of his stance on climate change, and what America should expect from him during his tenure.

Secretary Kerry made progress communicating the urgency of taking actions to combat climate change. In his follow up op-ed entitled, *We Work on Climate Change Every Day*, dated 19 June 2013, and also published in *Grist Magazine*, Secretary Kerry argued, "climate change is critical to the survival of our civilization."⁷⁰ The Secretary made similar remarks with Swedish Prime Minister Fredrik Reinfeldt in May 2013 stating, "Climate change is a matter of life and death."⁷¹ By his fifth month in office, Secretary Kerry made it known to all Department employees that climate change is a new foreign policy objective. The Secretary's personal

diplomacy to educate the American public and the employees of the Department of State about climate change was taking shape.

Figure 2: Op-Ed Articles Written by Secretaries Kerry vs. Clinton



In 35 months as Secretary of State, John Kerry wrote 12 op-ed articles (out of 45 articles) to highlight the urgency of protecting the environment and combating climate change, and he frequently framed climate change as an opportunity for growing the U.S. economy. His predecessor Hillary Clinton, by comparison, wrote three op-ed articles on climate change (out of 27 total articles) in 4 years. Secretary Kerry’s op-ed articles articulate the urgency of combating the new threat, and he used every opportunity to galvanize the support of the Department of State employees to lead the international community to develop a comprehensive climate change agreement in Paris, France at the end of 2015. The Secretary’s op-ed in the *Financial Times* dated 29 October 2015 read at one point, the “Paris climate conference is a rare opportunity-grab it.”⁷² Similar op-ed articles frequently translated into cables, emails, speeches, and other channels

to communicate the Secretary's vision and motivation into actions within the Department of State.

Inside the Department of State, the Secretary uses his personal diplomacy to frame climate change as a national security issue with a goal of achieving a global agreement in Paris on behalf of the American people. He mobilizes the Department employees across bureaus, offices, and overseas missions to confront the new threat. He issues climate change guidance to employees both stationed in Washington and overseas. Below are important bureaus and offices performing climate change responsibilities in the Department of State under the leadership of John Kerry.

Secretary Kerry has institutionalized climate change. After using personal op-ed articles to convey the President's vision of climate change to the American people and the workforce of the Department of State, Secretary Kerry used the *Quadrennial Diplomacy and Development Review* (QDDR), which started under former Secretary of State Hillary Clinton, to align the Department's strategic objectives with the White House's *National Strategic Security* priorities. The Department's new QDDR not only listed American foreign policy objectives, but it also provides analyses of the Department's short-term, mid-term, and long-term goals. The QDDR further establishes a baseline of foreign policy priorities with required resources and strategic means to achieve the ends, while providing a systematic means to gauge performance and assess results. Secretary Kerry states that the QDDR "focuses on a few big challenges and a few big opportunities, both strategic and operational."⁷³ The Department of State's 2015 90-page QDDR contains the phrase climate change 89 times, compared to 50 times in Secretary Clinton's 2010 242-page QDDR document. The 2015 QDDR institutionalizes climate change as one of the "big" challenges and opportunities for America.

Secretary Kerry's Leadership at the Department of State

Secretary Kerry's Department of State has bureaus, offices, programs, and missions to frame and advance the new national security policy of climate change, among them: the Office of the Special Envoy for Climate Change, the Bureau of Oceans and International Environmental and Scientific Affairs (OES), the Bureau of Overseas Building Operations (OBO), the Greening Diplomacy Initiative, and overseas missions.

The Office of the Special Envoy for Climate Change is new. Led by Special Envoy on Climate Change Todd D. Stern, the Envoy is the principal leader for the U.S. government in climate change-related efforts, including acting as the principal negotiator under the United Nations Framework Convention on Climate Change (UNFCCC), the Major Economies Forum (MEF), and other bilateral as well as multilateral discussions on climate change. The Envoy is the foremost expert on climate change, and he is responsible for advising on domestic climate and clean energy policy.⁷⁴

Stern embodies this description. He had served as President Clinton's Administrative Assistant and Staff Secretary.⁷⁵ His dedication to State and embrace of climate change is valuable because he had experience as the senior White House negotiator at the Kyoto Protocol and Buenos Aires negotiations. Overall, he is an excellent choice to run this new post. Prior to the United Nations Framework Convention on Climate Change Conference of the Parties (COP21) in Paris, France in November and December of 2015, Special Envoy Stern prepared the groundwork for the United States to secure an "ambitious, durable, and transparent global climate agreement" by holding early bilateral and multilateral discussions with a host of nations before the COP21 conference.⁷⁶ The Special Envoy holds the rank of Assistant Secretary of State.

The Bureau of Oceans and International Environmental and Scientific Affairs (OES) is another entity in the Department of State that has a role in climate change. OES formulates, advances, and implements foreign policy goals in the scientific realms including “climate change, wildlife trafficking, water, polar issues, ocean policy, infectious diseases, science and technology, and space policy, to name a few.”⁷⁷ Further, the bureau works with government agencies, the private sector, nongovernmental organizations, universities, private citizens, and other bureaus of the Department of State to advance U.S. foreign policy goals in these scientific endeavors.

Another Department of State-affiliated organization that has a big impact on climate change is the United States Agency for International Development (USAID). USAID is an independent federal agency created by Congress in 1961 to administer foreign economic and humanitarian assistance to developing countries, and Secretary Kerry provides the USAID Administrator with foreign policy guidance to “shape and sustain a peaceful, prosperous, just, and democratic world, and foster conditions for stability and progress for the benefit of the American people and people everywhere.”⁷⁸ The *USAID Climate Change and Development Strategy 2012-2016* ties sustainable development to clean energy, highlighting clean economic growth that provides stability and benefits for the U.S. and its partners.⁷⁹ In other words, USAID ties its aid programs to climate change mitigation, adaptation, and integration. Furthermore, USAID helps developing countries “to accelerate their transition to climate-resilient low emission sustainable economic development” to assist those in need while building a low-carbon, healthier planet for all. With presence in more than 80 countries, USAID works with host countries to “end extreme poverty and promote resilient, democratic societies while advancing our security and prosperity.”⁸⁰ USAID’s Administration reports to Secretary Kerry.

The Bureau of Overseas Building Operations in the Department of State is responsible for providing, administering, and building “safe, secure, and functional facilities that represent the U.S. government to the host nation and support our staff in the achievement of U.S. foreign policy objectives.”⁸¹ In addition, OBO’s approved facilities “represent U.S. values and the best in U.S. architecture, engineering, technology, sustainability, art, culture, and construction execution.” In support of the President’s climate change policy objective and long standing tradition of excellent U.S. architecture dating back to the Kennedy administration, OBO’s new 2010 design excellence initiative⁸² changed the “fortress” embassy model to a model “that embraces all elements of embassy construction—from location to architect selection, design, engineering and building technology, sustainability and long-term maintenance needs.”⁸³ The renamed “Excellence in Diplomatic Facilities” reflects a holistic approach to constructing and greening the facility. The new model uses various aspects of the greening initiative to design America’s new missions.

The U.S. Department of State green planning, implementation, and administration was launched in 2009 under the Greening Diplomacy Initiative (GDI). Overseen by the Greening Diplomacy Council, the Greening Diplomacy Initiative’s Council coordinates activities, capabilities, and strategic guidance across the Department of State on sustainable greening actions.⁸⁴ The Council is comprised of the Departments’ senior-level undersecretaries, assistant secretaries, special envoys, ambassadors, directors, and others and chaired by the Under Secretary for Management. The Council “harnesses the Department’s policy, management, and public diplomacy and expertise, from grass roots to senior management, to advance environmental efforts domestically and abroad, monitoring our progress toward sustainability, and leading by example”⁸⁵ through the Greening Council Working Group (GWCG). The

Greening Council Executive Secretariat, Greening Council Working Groups, and the Greening Council Chair make greening-related decisions in support of the Department's Sustainability Plan.

Greening the State Department saves money and reduces its carbon footprint. In fiscal year 2014, the Department received a 1 percent budget cut and lost another 3 percent due to inflation. With the money saved by greening the federal government strategy, the Department stayed "on track to meet this 4 percent loss."⁸⁶ Other successful headlines by the Greening Diplomacy Initiative included reducing greenhouse gas emissions from the Department's domestic buildings, increasing the number of alternative fuel vehicles to 45 percent of the domestic fleet, providing climate change training to over 60,000 employees, and sharing ideas with diplomatic missions in Washington, DC, and U.S. overseas missions.⁸⁷ Greening saves money at the Department of State, positively impacts the United States, and benefits the international community.

The office of the special envoy for climate change, bureaus and offices that support the policy, and the internal information greening actions require personal leadership, and Secretary Kerry is the glue that binds these moving parts.

Department of State's Preparation for COP21 in Paris, France

Secretary Kerry asked all to prepare for COP-21 in Paris, and the rapid-pace preparation continued inside the Department of State both domestically and overseas. While the vision and direction of the new policy started with Secretary Kerry, senior leaders working in Washington and abroad coalesced to form an effective team to represent America in Paris. The Secretary communicated with and encouraged all employees to get involved in this important topic, and the Department of State's senior leadership, in turn, met, discussed, and implemented the

Department's Greening Council Initiatives and other programs to reduce the carbon footprint. Additionally, chiefs of mission overseas provided support and regional specific ideas to prepare the American diplomatic team for Paris.

Every bureau took action to reduce the Department of State's carbon footprint. The Office of Medical Services presented "a quantitative view of air pollution at posts" worldwide and broke down the pollution levels by region to identify areas where the Department could take specific action. The result was an initial data point to start a conversation on climate change with the host nation. Multiple overseas posts installed an energy monitoring system, called MeterNet eco-option, to monitor energy consumption and take corrective actions to reduce it. The Greening Council Charter encourages posts to consider pre-packaged "greening" projects to implement timely sustainable options, thus increasing savings and reducing the carbon footprint. The Bureau of Budget and Planning works on a policy to allow posts to keep and use recycling rebates. The Bureau of Oceans and International Environmental and Scientific Affairs, in a collaborative effort with other bureaus, works with overseas posts to monitor air quality, which serves as an initial point to discuss and mitigate air pollution. The Bureau of Overseas Building Operations builds green facilities, deploys solar panels, harvests rainwater, reuses reclaimed water, and implements LEED® certified facilities. Under the auspices of the Greening Diplomacy Charter, every bureau and office is encouraged to reduce the carbon footprint and at the same time save money. Every bureau contributes.

To better amplify the importance of climate change and coordinate global activities among overseas missions, the Department of State has an internet portal available only to DOS personnel in which to share, coordinate, and communicate the Secretary's vision. In preparation for Paris 2015, Secretary Kerry continually reminded all employees to understand the importance

of climate change, learn how to talk about the topic intelligently, and use diplomatic tools to advance climate change in the global realm. The Secretary frequently sends emails and cables to inform, educate, and encourage everyone to get involved, and the leadership regularly discusses, updates, and coordinates the Department's overall strategy to meet federal requirements, set an example for sustainable conservation, and use diplomatic work on behalf of the American people. Official guidance, transcripts, the President's Climate Action Plan, social media tools, public diplomacy outreach tools, and additional resources were pushed to keep every post informed and in-step with the Secretary's overall strategy.

For example, prior to the meeting in Paris, France in November to December 2015, Secretary Kerry encouraged all relevant personnel from over 290 missions overseas and all domestic locations to stay current on the policy position of the U.S. government on climate change by way of the internal portal with point of contacts for two-way communication. The portal also allowed bureaus, offices, and missions to share success stories, maintain a dialogue, and provide feedback back to headquarters, resulting in an effective communication and coordinated effort that led to Paris 21. Secretary Kerry's personal touch to all employees via cables, emails, speeches, videos, etc. reminded every employee about the high priority he placed on climate change and other national security priorities.

The result from the Conference of the Parties 21 (COP-21) in Paris, France did not surprise anyone that works in the Department of State. Secretary Kerry's diplomatic team prepared for Paris, trained on the issue, and achieved the first-ever global climate change agreement on behalf of the American people. The agreement established a long-term strategic approach with a rigorous standardized process of review to tackle global greenhouse gas emissions. President Obama concluded, "The Paris agreement establishes the enduring

framework the world needs to solve the climate crisis. It creates the mechanism, the architecture, for us to continually tackle this problem in an effective way.”⁸⁸ The agreement is unprecedented.

This global agreement was possible due to the efforts of many people, but Secretary Kerry’s personal diplomacy provided the foundation for the agreement to be reached. The United States negotiators effectively eliminated the divisive two-tiered system to reach an agreement based on an ambitious, durable framework centered on nationally determined contribution plans. Most importantly, the new agreement limits the rise of global temperature below 2 degrees Celsius.

Shortly after the parties agreed to the treaty, President Obama proclaimed, “two weeks ago, in Paris, I said before the world that we needed a strong global agreement to accomplish this goal—an enduring agreement that reduces global carbon pollution and sets the world on a course to a low carbon future. A few hours ago, we succeeded. We came together around the strong agreement the world needed. We met the moment.”⁸⁹ The president’s statement rings true, because his Secretary of State refused to allow another failure at the Conference of the Parties on climate change. In Secretary Kerry’s first op-ed article on Grist.com on June 19, 2013, shortly after assuming his Cabinet Post, the Secretary stated, “if we waste this opportunity [in Paris], our failure may be the only thing our generations are remembered for.”⁹⁰ Secretary Kerry’s personal diplomacy efforts did not fail, and he will be remembered as the American who led his nation to its first-ever global climate change accord.

The 2015 Paris accord has increased tension between the Obama administration and the Republican controlled U.S. Senate. This is because the climate accord does not require a two-thirds vote in the U.S. Senate, while the treaty does.⁹¹ Before the Paris meeting, the U.S. Senate voted “to block President Obama’s tough new climate change regulations” in an attempt to

undermine and block the negotiation.⁹² It did not work. After the agreement was reached in mid-December 2015, Mitch McConnell, the Senate majority leader, stated that “the president is making promises he can’t keep, writing checks he can’t cash, and stepping over the middle class to take credit for an ‘agreement’ that is subject to being shredded in 13 months.”⁹³

Conclusions

The subject of climate change confronted the past four administrations. In 1992, the George H. W. Bush administration discussed climate change at the Rio Summit, but little action took place to combat the vast amount of carbon dioxide released into the earth’s atmosphere. Subsequent international meetings during the Clinton administration did not fare well either because the U.S. Senate refused to ratify the treaty for economic reasons. This led President Clinton to sign a number of executive orders to “green” the federal agencies and forge a policy of clean energy, conservation, and sustainability. The George W. Bush administration continued using Clinton’s executive orders to green the federal government, and in 2007 the president consolidated Clinton’s five executive orders into EO 13423, simplifying the federal requirements in energy efficiency, acquisition, renewable energy, toxic chemical reduction, sustainable building, electronics stewardship, fleets, and water conservation.

The Obama administration did not settle on this usual approach to climate change. First, the president re-introduced climate change to *National Security Strategy* publications and elevated climate change to a national security objective. Later, the administration used Executive Orders 13514 and 13693 to further green the federal government. Further, the President initiated the Global Climate Change Initiative (GCCCI) based on the three pillars: clean energy, sustainable landscape, and adaptation. President Obama accelerated climate change policy when he picked John Forbes Kerry as Secretary of State in February 2013.

Secretary Kerry put climate change into the consciousness of the American people. Since assuming his cabinet post on 1 February 2013, the Secretary wrote multiple op-ed articles on climate change and urged immediate actions to stop and reverse the negative impact of climate change. In 35 months as Secretary of State, Kerry wrote 11 climate change op-ed articles and argued that climate change is not only a national security issue, but it is also an economic opportunity for America. The Secretary's personal diplomacy also inspired, prepared, and galvanized the employees at the Department of State to seize the opportunity in Paris, France, to achieve the first-ever global climate change agreement. Kerry used emails, cables, speeches, videos, Twitter, meetings, etc. to engage the American public and the employees of the Department of State.

Secretary Kerry's implementation of personal diplomacy worked, and on 12 December 2015, at the 21st United Nations Framework Convention on Climate Change of Parties (COP21), more than 190 nations agreed to adopt a global climate change agreement to reduce greenhouse gas emissions. The global agreement was unprecedented: one, getting more than 190 nations to agree to reduce human-accelerated climate change had been unattainable since 1992; two, a sense of cooperation prevailed; three, more than 190 negotiators were ready, willing, and able to accomplish the task; and four, Secretary Kerry and his team was motivated, prepared, and engaged with the international community not to let the opportunity get away this time. The Secretary team knew the task, had the resources and knowledge to work on the important topic, and was determined to reach a global climate change agreement on behalf of the American people.

The next steps after the 2015 Paris Agreement are to negotiate under the Ad hoc Working Group on the Paris Agreement (APA) in Bonn, Germany in May 2016, and to meet with the

international community in Morocco next November on the next Conference of the Parties.

With Secretary Kerry and the senior leadership remaining with the Department of State until 20 January 2017, the process to develop technical guidance in Bonn and Morocco is likely.

Implications

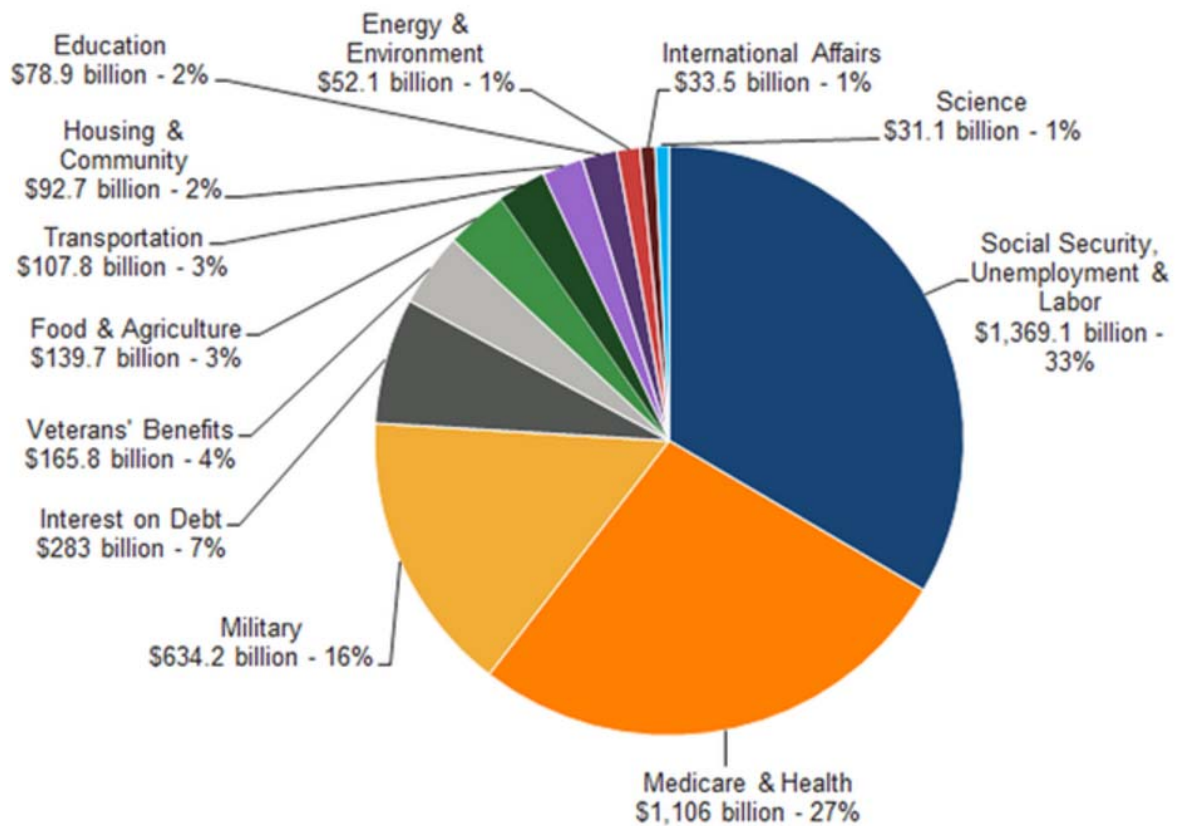
There are multiple implications of this study:

As the largest federal agency in the United States, the Department of Defense (DOD) can positively affect President Obama's greening initiative. Economic opportunities, national security, and energy security are sufficient reasons for the largest arm of the federal government to collaborate on the greening initiative. However, other reasons including saving money, clean energy development, protecting the environment, and public relations make the initiative a winning proposition for the American people. With 2,118,000 active, guard, and reserve personnel and a budget of \$634.2B in FY 2016, one percent savings translates to a significant \$63.4M annual savings.⁹⁴ Additionally, exploring and moving the concept of greening the military forward will require a deeper understanding of clean energy development and usage, advancing the national economic interests, and reducing the strategic risks from reliance on foreign-controlled fossil fuels. Finally, research including intensive fieldwork, data collection and analysis, and ethnographic analysis can yield new strategies for the Department of Defense and the nation on the path to meeting energy security, national security, economic opportunities, and energy independence.

The greening initiative saves money. With a combined annual budget of \$4.1 trillion in fiscal year 2016, one-percent savings on the federal budget translate to \$41 billion saving annually. Furthermore, if this saving is combined with the private sector, total savings translate to billions more, cutting the carbon footprint, reinvigorating clean energy development, and

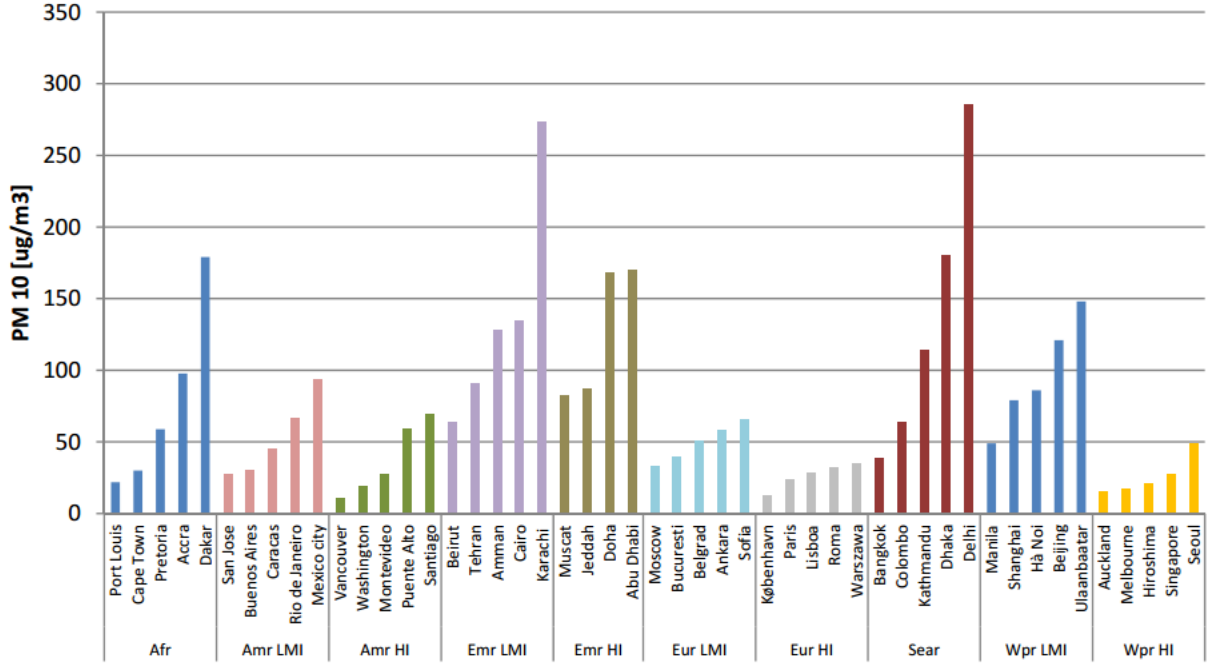
putting America on a path to energy independence. Climate change offers economic opportunities to transform the economic sector and place America on a passageway to sustainable energy development this century. The return on investment guarantees a better future for America and all Americans.

Figure 3: President’s Proposed \$4.1 Trillion Total Spending Budget (FY 2016)
(Source: Department of Defense)



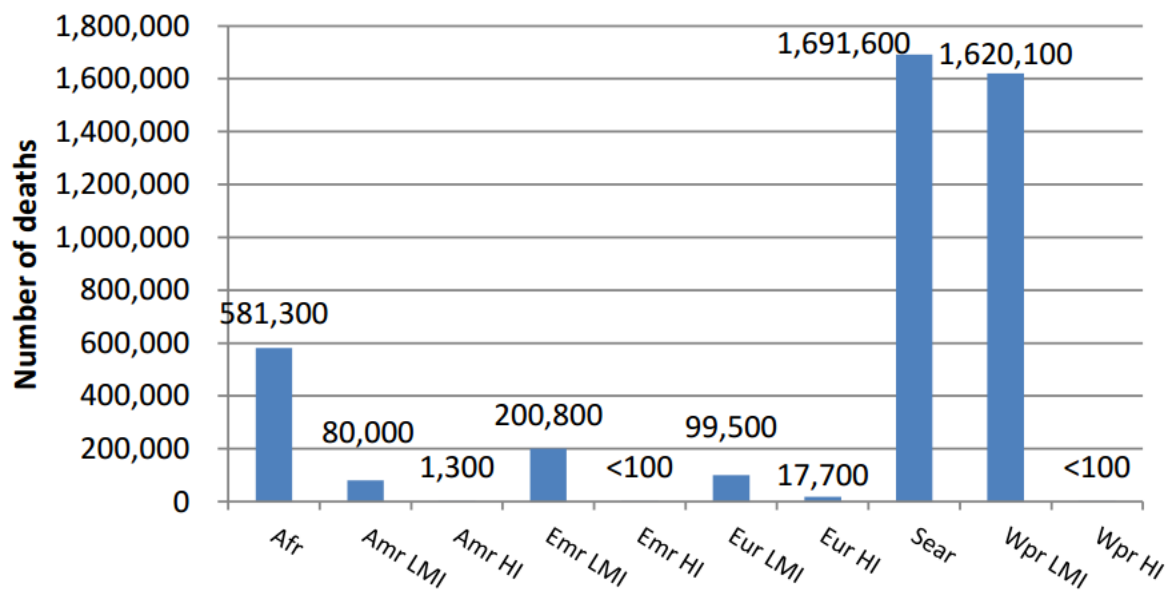
Appendix

Appendix A: PM10 Levels for Selected Cities (Source: World Health Organization)



PM10 levels for selected cities by region in the period of 2008-2012. PM10: Fine particulate matter of 10 microns or less; Afr: Africa; Amr: America; Emr: Eastern Mediterranean; Eur: Europe; Sear: South-East Asia; Wpr: Western Pacific; LMI: Low- and middle-income; HI: high-income.

Appendix B: Total deaths attributed to health by pollution in 2012
 (Source: World Health Organization, 2014)



HAP: Household air pollution; Amr: America, Afr: Africa; Emr: Eastern Mediterranean, Sear: South-East Asia, Wpr: Western Pacific; LMI: Low- and middle-income; HI: High-income.

Appendix C: Service Members Totally 2,118,000 (Active, Guard, and Reserve)

(Source: Department of Defense, 2016)

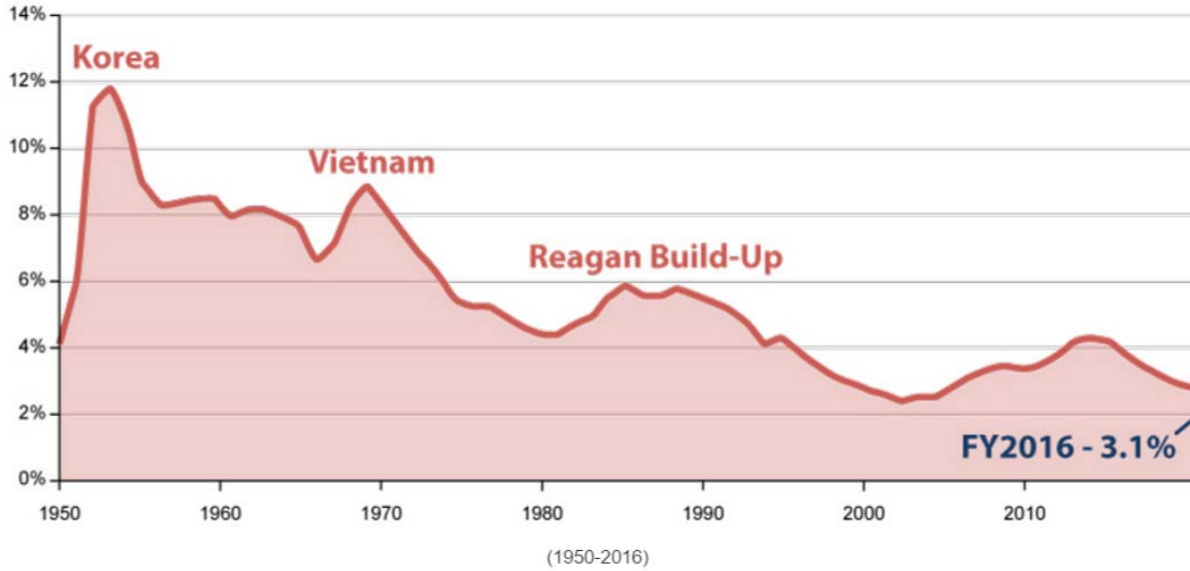


(Numbers by FY16, includes Active, Guard, and Reserve.)

Appendix D: U.S. Military Structure Investments
(Source: Department of Defense, 2016)

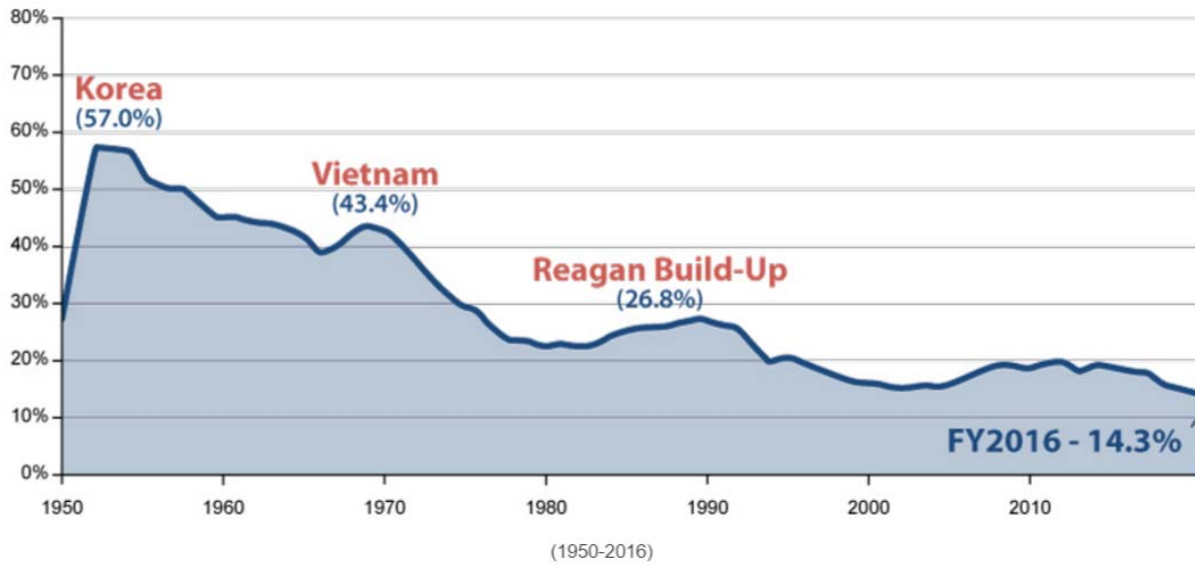


Appendix E: U.S. Military Spending as Share of the Economy (GDP)
(Source: Department of Defense, 2016)



Appendix F: U.S. Military Spending as a Share of Total Federal Spending

(Source: Department of Defense, 2016)



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