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# An Assessment of Democratic and Non-Democratic Governments' Effectiveness in Implementing Environmental Policy: A Case Study of the U.S. and China

Gregory C. Coppola Jr.

Fairfield University, [gregory.coppola@student.fairfield.edu](mailto:gregory.coppola@student.fairfield.edu)

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## Cover Page Footnote

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## **An Assessment of Democratic and Non-Democratic Governments' Effectiveness in Implementing Environmental Policy: A Case Study of the U.S. and China**

By Gregory Coppola

### **Introduction**

Climate Change, resource depletion, pollution, and sustainability are all increasingly growing environmental concerns that are shifting to the forefront of many political actions and negotiations. Immediate action domestically by individual nations as well as the international community as a collective unit are essential to the preservation, protection, and enhancement of the environmental and human health. The world's leading nations must continue to and in many cases, begin to, acknowledge the seriousness of these environmental issues, commit to effective and rapid improvements, and most importantly uphold these commitments. All nations are called upon to act on these environment commitments despite size, wealth, overall contribution to pollution, or form of government. Developing nations that rely on environmentally harmful materials as well as rich, developed nations must all answer the call to enforce environmental public policy in order to avoid losing what is in peril. This paper aims at analyzing the key differences between democratic and non-democratic nations in adopting environmental legislation. This report analyzes the United States and China as two representative cases of democratic and non-democratic nations, while noting that both governments do not reflect all democratic and non-democratic nations. This paper explores these two case studies because of their relevance as global powers and these results are not indicative of all democratic and non-democratic nations. However, this paper compares these two states because both governments exemplify, not only the ability, but also the willingness of governments in both contrasting systems to enact environmental policy in recent decades.

Throughout the late 20<sup>th</sup> century, the United States of America acted as a global leader not only in creating and adopting environmental public policy but also by convincing other nations to cooperate in international environment agreements, like the Montreal Protocol, which phased out the use of ozone-depleting chemicals. China, on the other hand rapidly grew economically and militarily throughout this time-period partly due to the heavy reliance on coal and oil as the backbone for economic development, which evidently led to the severe degradation of air and water quality in many regions of China. However, more recently, the U.S. and China have traded roles. China is swiftly becoming the global leader in installing wind, water, and solar power energy, while simultaneously reducing usage of oil and gas nationally.

Consequentially, this raises several questions: what are the strengths and weaknesses of both systems in terms of adopting public policy? What has changed overtime within the U.S. and China that led to a shift in environmental policy in both nations? Is China rapidly becoming the vanguard of implementing environment policy and if so, does this make an authoritarian system more productive and efficient at forming such polices? But most importantly, for what specific reasons is the global leadership of environmental sustainability shifting from the U.S. to China and what are the implications for the future?

This paper will examine the past actions by the U.S. and China in implementing environmental policy in order to address these guiding questions. In doing so this paper will detail the strengths and weaknesses of both democratic and non-democratic nations in addressing environmental concerns and adopting policy effective environmental practices, through analysis of scholarly articles and data on the environmental degradation and legislation historically within these two cases. First, this study will assess the foundational aspects of democracy within the U.S. that directly influences the policy making process. Second, this paper will examine the

United States' leadership garnering support for global environmental policies, like the Montreal Protocol and creating policy solutions. Additionally, this paper will also discuss the United States' recent shift away from environmental policy, such as the Paris Agreement. Then, this paper will analyze non-democratic government's ability to implement environmental policy by analyzing China's authoritarian regime. Most significantly, this paper will discuss the strengths and weaknesses of both democratic and non-democratic governments in creating and adopting domestic and international environmental policy. Finally, this analysis hopes to provide insight into future how the China is swiftly becoming the international leader in environmental legislation and the implication of such a shift in the international arena.

### **Literature Review**

While the pursuit of sustainability is a relatively new focus for many countries, the literature does offer some insight into the advantages and disadvantages of different types of governments in adopting domestic and international environmental policy. Several studies examine the ability of both democratic and autocratic nations to effectively formulate and implement environmental policy.

Scholars contend that "democratic institutions have opposite effects on environment quality; a positive direct effect on environment quality and a negative indirect effect through investments and income inequality" (Romuald, 2011). Democracies have a positive effect on environmental quality because their citizens are free not only to express their opinions, but also to pressure government officials to shift the agenda, while elected officials are equally pressured to vote on legislation that reflects the views of their constituents to gain reelection. (Payne 1995). Furthermore, citizens of a democracy are more inclined to create lobbying groups due to their

freedom of speech and alternative sources of information not influenced by the government that can influence political agenda and help create effective environmental policy (Payne 1995).

When individuals living in a democratic nation are well informed about important issues that could potentially impact the health and safety of their well-being, they often positively improve the status of major social problems (Page and Shapiro 1983).

In economic terms, political and social freedoms favor environmental protection because non-democratic regimes tend to not consider the environment a public good as much as democracies. Autocratic regimes are often governed by political elites who monopolize and own large percentages of national incomes and revenues. “The implementation of rigorous environmental policies can lower the levels of production, income and consumption, which, in turn impose a higher cost on the elite in an autocracy than on the population whereas the marginal benefit is uniform for both elite and population.” (Deacon 1999).

In opposition, there are many other theorists and academics who propose that democracy hurts environmental quality. Many of these theorists argue that democratic freedoms are jointly connected to economic growth and expansion. Desai contends, “the management and overexploitation of environmental and natural resources... This overexploitation is accelerated in democracies in which individuals have business and economic freedom (Desai 1968).

Additionally, “Democracies are also economic markets wherein lobbying groups are very important... Democracies are not considered as protecting environment quality as they are supposed to satisfy the preferences of markets and lobbying groups which aim at maximizing their economic profit that is not in favour of a better environment quality (Dryzek 1987).

Democracies are directly connected with capitalism and the pursuit of individual progression. The ideology of the American dream stimulates an individualist mentality, not a collective



mindset. “Democratic institutions have direct effect on environment quality, indirectly through income inequality and investments...The larger the scale of economic activity, all else equal, the higher the level of environmental degradation...since increased economic activity results in increased levels of resource use and waste generation (Romuald, 2011).

Academics stress an increased concern for effective environmental legislation through individual commitment and international cooperation. Their literature emphasizes the importance of environmental public policy for preservation and enhancement of environmental quality and human health. They detail historically when many democratic and non-democratic nations have been able to compromise on a specified course of action and implement effective policy that has reversed the negative side-effects of economic expansion and prepared for the consequences of climate change. However, they also note the historical examples when many nations have purposely chosen to ignore long-term environmental consequences in favor of meeting immediate needs through rapid economic growth and expansion.

The research conducted by these scholars and theorists inspired the work for this study; this paper looks to take a step further to answer the guiding questions mentioned previously. In doing so, this paper will assess the ability and willingness for democratic and non-democratic nations to address environmental concerns by analyzing the specific instances when the U.S. and China succeeded in creating environmental policy and when they failed to do so. In addition, this paper will offer implications for the United States and China, specifically relating to the possibility of future commitment to environmental policy, the degree of global environmental leadership for the U.S. and China, and most importantly the ability or inability to prevent climate change based on U.S. and Chinese decisions. Overall, based on the current agenda and trajectory of both nations, this paper hopes to offer insight into the strengths and weaknesses of both

nations in addressing environmental policy as well as the global status in terms of the environment quality and leadership in the international community.

### **What Constitutes a Democracy and an Authorization Regime?**

It is crucial to understand the fundamental characteristics of both democratic and non-democratic nations in order to comprehend the advantages and disadvantages of implementing environmental policy for both systems. Understanding the complicated processes that go into forming policy within a democratic government, such as the U.S. versus an authoritarian regime, such as China, is vital to analyzing the benefits and difficulties of both government types.

It is vital to understand that the unique version of democracy that is demonstrated within the U.S. is not a perfect example of all democracies. Many democracies in Europe and other parts of the world define democracy differently and therefore, exhibit different democratic characteristics. Generally, democracy can be defined as “any governing body that makes decisions by combining the votes of more than half of those eligible and present is said to be democratic, whether that majority emerges within an electorate, a parliament, a committee, a city council, or a party caucus.” (Schmitter 1991, 78). Commonly between most true democracies is the establishment of separate branches of government which results in a division of power in order to avoid one individual or one council from gaining absolute power. As opposed to dictators, the legitimacy of authority is in the governmental offices that is bestowed upon by politicians through elections. In a democracy, the government and the citizens agree to a social contract with each other. “Democracy is a system of governance in which rulers are held accountable for their actions in the public realm by citizens... citizens are expected to obey the decisions provided its outcome remains contingent upon their collective preferences as expressed through fair and regular elections.” (Schmitter 1991, 82). The governance also has the

responsibility of promoting and maintaining rule of law; no individual despite position or economic status is higher than the laws that govern a democratic society. Additionally, in democracies, often at times, there is cooperation and competition among several different political parties that represent the views and beliefs of citizens with whom they align with politically. Differences in views as well as the capacity to disagree and challenge ideas, cultural norms, and policies is a key fundamental aspect of democracy.

Robert A. Dahl, author of “What Political Institutions Does Large-Scale Democracy Require?”, lists several criteria that define a fully functional democracy. Democracies must have elected officials who represent the people, free, fair, and frequent elections, freedom of expression for all citizens without the threat of being punished, and easily accessible, alternative sources of information not influenced or controlled by the government (Dahl 2005, 188). Moreover, the right for citizens to form organizations and political parties otherwise known as associational autonomy, as well as an inclusive citizenship where every adult shares the same rights as every other citizen living within that country are six indispensable principles for a fully-functioning democracy (Dahl 2005, 188-189). It is also important to acknowledge that democracies must be self-governing and in no way, be influenced or controlled by a separate governing entity outside of boundaries of that nation or its own leaders. Government officials should not and cannot be directly coerced or forced into different political decisions by outside governments or the hierarchy of their own institution.

However, it is also imperative to understand that democracies differ on many key focuses and institutional procedures. Democracies are constantly evolving to reflect not only the culture of the region but also the views of the citizens living in a specific nation. This report analyzes the U.S. version of democracy to better understand the strengths and weaknesses of distinct

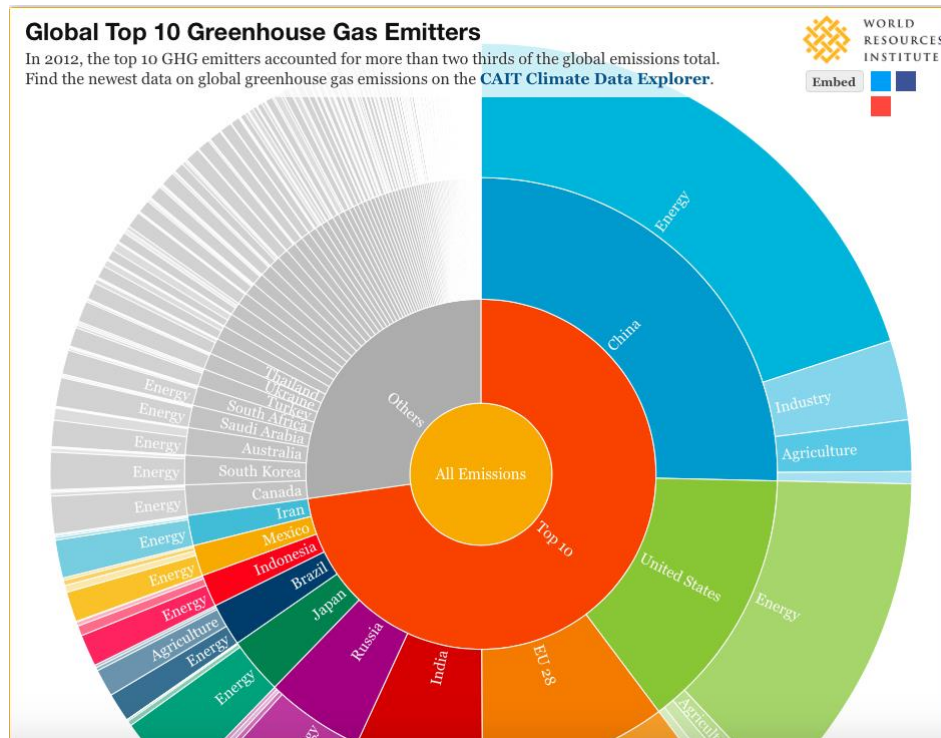
government types, but in no way declares that every democracy is exactly like the U.S. government. Democracies disagree on the importance and role of parliament vs two chambered congress, pluralism and federalism, party government roles, federal elections, etc. Schmitter and Karl argue, “While each of the above has been named as an essential component of democracy, they should instead be seen either as indicators of this or that type of democracy, or else as useful standards for evaluating the performance of particular regimes” (Schmitter and Karl 1991, 85) Furthermore, “Unlike authoritarian regimes, democracies have the capacity to modify their rules and institutions consensually in response to changing circumstances. They may not immediately produce all the goods mentioned above, but they stand a better chance of eventually doing so than do autocracies.” (Schmitter and Karl 1991, 87).

In fundamental contrast to democracy, authoritarian regimes differ on many central issues like, the importance of basic freedoms, the necessity and legitimacy of elections, the role of society in government decisions, leadership, and the relationship between the leaders and the governed. Encyclopedia Britannica defines authoritarianism as “any political system that concentrates power in the hands of a leader or a small elite that is not constitutionally responsible to the body of the people.” (Britannica). Authoritarian regimes involve one individual or a small group of leaders, who often have absolute power over government and military functions. If elections are held in authoritarian nations, they are susceptible to corruption by the governing body. Basic freedoms, like free speech, press, and assembly are often disallowed, or controlled by the government. Often, authoritarian regimes, censor the information and stories that the media and internet present to their audiences. Additionally, in many authoritarian regimes, citizens and businesses must obey the laws and regulations assigned by the leaders of the nation, even though they may not reflect the views or best interest of the people. Again, not every

authoritarian regime fits into one definition; there are many different versions and interpretations of authoritarian leadership that have been realized in different regions. There are monarchies, military regimes, electoral regimes, one-party regimes, and limited multi-party regimes that all follow under the authoritarian regime category. (Hadenius and Teorell 2006). Similarly to the purpose of the U.S. for democracy for this analysis, China's is simply a case study used to better understand the advantages and disadvantages of an authoritarian government in formulating and implementing environmental policy, but in no way does this paper propose that China's government is representative of every authoritarian regimes.

The two case studies for this report, the United States and China, are large-scale, contradictory governmental systems that together have emitted in recent years over 35% of the global CO<sub>2</sub> emission annually (US EPA, O. A, 2014). Figure 1 represents these numbers in a graph, while also noting the total emissions of the 10 biggest contributors to global GHG emissions. The U.S. and China lead the globe as the two largest contributors of global greenhouse gas emissions, while entire regions, such as Europe, do not equal the same level of air and atmospheric pollution as either of these countries individually.

Figure 1: Distribution of GHG Emissions by Country



Nevertheless, even though they are not representative of all other systems, they offer significant insight into the ability and inability for such systems to protect environmental standards through legislation. Examining their positions on historical events such as the Montreal Protocol, the Implementation of the Clean Water Act, and the Paris Agreement as well as the current agendas and direction of their governments in terms of environmental protection and enhancement provides a means to understand the strengths and weaknesses of enacting environmental policy in each system. Knowing landmark political-economic decisions that impacts the environment as well as fully comprehending how each system was able to act in such manner is extremely useful. Additionally, examining the history as well as the current trends for both the U.S. and China can give some vision into the future for both nations as it pertains to climate change and other environmental legislation.

### The U.S.: A Case Study for Democracies

For several decades during the late 20<sup>th</sup> century, the U.S acted as both a global leader in environmental legislation as well as a paradigm of ineffectiveness through its inability to form policy. In the past, the U.S. lead the world towards environmental improvement by enacting global environmental policy and pushing for cooperation among the international community; however, more recently U.S. environmental legislation and political commitment both domestically and international has been plagued by environmental political paralysis. The United States has been a chief leader in international delegations but also ironically an enormous contributor to many current and perhaps future global environmental challenges. As a regional hegemon and one of the world's largest polluters, the U.S. level of commitment to environmental legislation has had and will continue to have a influence in the success or failure of the international community to address such concerns.

A perfect example of the U.S. commitment to environmental protection both domestically and internationally was prevalent in 1998 when the U.S was the first nation to ratify the international agreed upon Montreal Protocol. The Administrator of the Environmental Protection Agency (EPA), Lee M. Thomas detailed this landmark treaty as “an unprecedented demonstration of international cooperation and commitment to act responsibly to protect our common environment... provides the basic framework for ensuring the integrity of the earth's ozone layer” (Shabecoff 1998). This international treaty was signed by 31 countries to phase out ozone depleting chemicals called chlorofluorocarbons, or CFC's, that were used in everyday goods like refrigerators. In 1998, significant scientific data revealed that the constant use of CFCs and other ozone depleting chemicals were destroying the ozone layer, specifically the layer over Antarctica and South America. The depletion of this atmosphere coating was predicted to increase the frequency and intensification of global temperatures and severe storms. *A New York*

*Times* article published in 1998 on the day of the U.S ratification of the Montreal Protocol states, “The vote was 83 to 0. With today's vote, which had been expected, the United States became the first major user and producer of chlorofluorocarbons to approve an international agreement that would first freeze and then roll back their consumption and production” (Shabecoff 1998).

As one of the first nations to ratify this pivotal international agreement, the U.S. led the charge against an international environmental challenge and potential future global disaster. The leaderships of the U.S. paved a path that many other nations followed shortly after and set a precedent for the effectiveness that can be achieved through cooperation among the international community. “The Montreal Protocol... is a global example of diverse environmentalist forces in action. Eventually the weight of the original international agreement persuaded many reluctant states to sign, showing how cooperation can facilitate more cooperation” (Payne 1995). A scientific study titled "Montreal Protocol Benefits simulated with CCM SOCOL", conducted by Atmospheric Chemistry and Physics used a computer model to compare earth's ozone layer in 2013, when the study was conducted, to what it was projected to be like in 2090. The results showed an ozone layer increase of 60% by 2090 because of the Montreal Protocol, while without it, there would be a 70% decrease in the ozone layer. (Egorova, T., E. Rozanov, M. Hauser, and W. Schmutz 2013). Furthermore, the study also concluded that the Protocol already prevented the depletion of 10-30% of the present day total ozone layer in the northern and southern hemispheres. (Egorova, T., E. Rozanov, M. Hauser, and W. Schmutz 2013).

Additionally, landmark U.S. national statutes, like the Clean Water Act, set standards for environmental policy within the U.S. as well acted as models for other countries to implement. The Clean Water Act is a landmark U.S. law that overtime, with the addition of several amendments, has become a national source on water quality and pollution. The Clean Water Act



“establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters” (US EPA 2017). The Clean Water Act has not only led to the heightened awareness of water pollution, but also laid the foundation for other organizations and legislation devoted to protecting and enhancing U.S waters from harmful chemicals and discharges, such as The National Oceanic and Atmospheric Association (NOAA). The influence of innovative environmental legislations such as the Clean Water Act has also expanded past U.S. borders into other countries.

For example, In Iraq, the “Iraq Upper Tigris Waterkeepers” is an organization whose mission is to “advocate and work to protect the rivers, streams and waterways of Iraq and support local communities in the sustainable use of these natural resource” (Nature Iraq). Their purpose, much similar to the Clean Water Act is to protect and improve water quality through the regulation of pollutants and water quality. Virginia Tice of EcoWatch explains, “Like other major American environmental laws, the CWA serves as model legislation for countries looking to regulate the discharge of pollutants into their surface waters” (Tice 2012). The message of “Swimable, Drinkable, and Fishable Water is one that certainly resonates with the goals and mission statement of this organization. Virginia Tice explains that with the guidance of the Clean Water Act, the Iraq Upper Tigris Waterkeepers has been able to organize educate and community outreach as well as somewhat regulate the amount of chemical discharge in the parts of Tigris river (Tice 2012). She emphasizes, “No matter how much further American environmental advocates feel they still need to go in the fight for clean water, clean air, biodiversity and habitat preservation, America nevertheless serves as an inspiring example for countless advocates the world over” (Tice 2012).

The U.S undoubtedly greatly influences the rest of the globe with both its actions and inactions. At times when the U.S. acted as a global leader, U.S. citizens and people without other countries have benefited directly and indirectly from better environmental quality and stricter legislation; however, when the U.S has been unable to act, it has proven to be very difficult to achieve global change. In terms of environmental policy both domestic and abroad, the U.S. has experienced environmental political paralysis for host of reasons such as, bipartisan, intense lobbying, climate change doubters, and complicated governmental procedures. The inability of the U.S. to enact environmental policy and/or promote cooperation internationally has severely delayed progress on environmental health.

Recently, the U.S. government has failed to agree on effective environmental policies both domestically and internationally, both during the Obama and Trump administrations. For democratic President Barack Obama, who made climate change a top priority in his second term, intense lobbying against clean energy, and bipartisanism greatly prevented him from meeting the goals of environmental treaties, such as the Paris Agreement. The Paris Agreement is an internationally agree upon treaty that intends to gradually phase out fossil fuels around the globe in order to prevent the Earth's temperature from raising 1.5 degrees Celsius. During President Obama's administration, the U.S. Congress never actually ratified the Paris Agreement, through an executive order. An executive order is "A rule or regulation issued by the president that has the effect of law... These orders can enforce legislative statues, the constitution, enforce treaties, and establish or modify practices of administrative agencies" (National Constitution Center). Joel Stonedale of "The Hill" explains "the President cannot bind the country with an executive agreement; he can only bind his administration.... Thus, the Paris Agreement is either an unratified treaty—in which case it has no effect—or it is an agreement only with the Obama

Administration—which is only valid until his administration ends (Stonedale 2016). He was unwilling to put the Pairs Agreement before Senate because he was confident that he could not convince a majority of the Republican members to ratify the agreement (Tuttle, 2017). In some instances, the separation of powers can prevent legislation, that many believe to be necessary, from achieving ratification. Joel Stonedale reiterates, “The separation of powers prevents the President from binding the country unilaterally...Our system...requires combinations of offices to work together...A bill passed only by the Senate is not the law of the United States, nor is an agreement signed solely by the President (Stonedale 2016).

Majority support from both the president and Congress is very difficult to achieve especially when Congress and the president support two opposing political parties, this is especially difficult in areas of intense dissection between the two parties, such as climate change. However, when the political party of congress and the presidency align, it can be much easier to make political change. For President Donald Trump and the current republican majority congress, revoking former President Obama’s executive order that temporally bound the U.S. to the agreed upon goals of the Paris treaty was not as difficult as it was to join for President Obama. For many international agreement and pledges, especially those being on controversial issues such as climate change, a presidential signature lasts only as long as a presidency. With the recent promises by Nicaragua and War-torn Syria to the Paris Agreement, Benjamin Hart of *New York Magazine*, writes “it really is America versus the rest of the world” (Hart 2017).

Bipartisanship, intense anti-renewable energy lobbying, climate change doubters, and complicated democratic government procedures have all contributed to recent U.S. environmental political paralysis. When the President Obama and Chinese President Xi Jinping mutually agreed to significantly reduce greenhouse gas emissions by 2025, many viewed this as

the first step towards combatting climate change (Harrington 2017). Rebecca Harrington adds “Together, the countries [U.S. and China] accounted for 45% of the world's carbon dioxide emissions in 2014. This was the first climate accord that both superpowers agreed to, which legal experts heralded as the best sign of its long-term worldwide success” (Harrington 2017).

While the U.S. struggled to find effective compromise on environmental legislation in the Obama administration and refuses to even acknowledge the legitimacy and seriousness of climate change, China is rapidly reversing the consequences from its past neglect of the environment with efficient and effective environmental legislations.

### **China: A Case Study for Non-Democratic Nation**

China is the perfect example of a non-democratic nation that has demonstrated the ability to both completely disregard environmental health as well as intensely promote environmental legislation. As stated previously, China’s government is unique and may not be representative of all non-democratic regimes, but it’s past neglect of the environment and the drastic shift in political agenda can offer insight into the ability for a non-democratic nation to implement environmental policy. Keith Johnson of “Foreign Policy” reports, “After almost four decades of breakneck growth at all costs, China’s leaders seem to have officially enshrined a ‘new normal’” (Johnson 2015).

For several decades, one of China’s primary objectives was economic growth at all cost. Very rapidly, China became a regional superpower through the heavy use of environmentally harmful resources, like coal, oil, and aluminum to maximize production and therefore profit in industry, engineering, and business. Currently, China leads all countries as largest user of coal production and largest emitter of greenhouse gases. “China... was responsible for 27 percent of

global emissions in 2014... and accounts for about half of global coal consumption” (Albert & Xu 2016). China depends on coal for nearly 70% of its energy, which equates to more than 25% of global emissions (Remais 2011). According to China’s Ministry of Public Security, car ownership in China has escalated from 2004 levels of 27 million to 154 million in 2016 (Albert & Xu 2016).

China’s aspiration for economic development and regional hegemony has led to unprecedented growth in such a short amount of time, but not without consequences. China wastes large sums of its GDP to simply combat environmental degradation. “The cost of environmental degradation in China was about \$230 billion in 2010, or 3.5 percent of the nation’s gross domestic product — three times that in 2004” (Wong 2013). Elizabeth Economy writes, “Poorly regulated industrial and household emissions and waste have caused levels of water and air pollution to skyrocket. China's development and environment practices have also made the country one of the world's leading contributors acid rain, ozone depletion, global climate change, and biodiversity loss” (Economy 2003). The estimated cost associated with environmental degradation is based on the amount needed to combat pollution and improve the ecosystem, which Wong describes as “the price that China is paying for its rapid industrialization” (Wong 2013). Eleanor Albert and Beina Xu of *The Council on Foreign Relations* explain, “China’s modernization has lifted hundreds of millions out of poverty and created a booming middle class...China’s environmental footprint is far greater than that of any other single country” (Albert & Xu 2016). Ironically, after decades of environmental neglect and economic growth, environmental pollution impinges on China’s ability to grow economically in the future. “Concerns about a range of environmental stresses and energy security...have sparked

China's determination to improve energy efficiency and cut pollutants, and to increase the use of clean energy in order to help its transition to a low-carbon economy" (Zhang 2013)

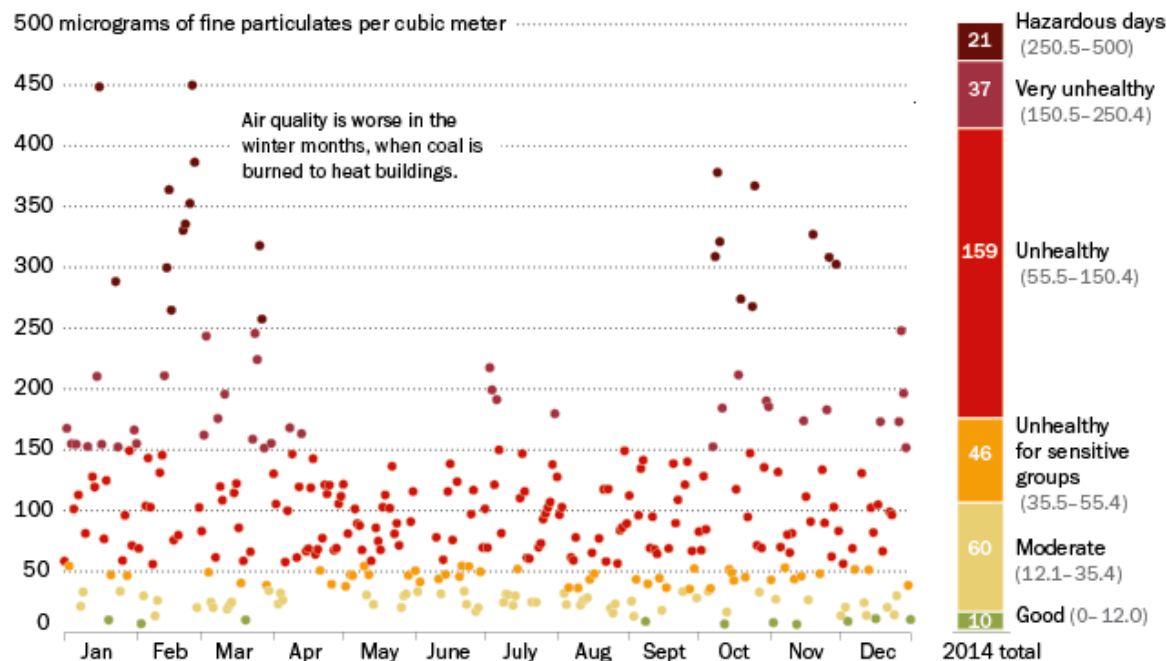
Across China's major cities and rural villages, millions of individuals face severe environmental challenges largely due to the pollution brought on by decades of economic conquest and advancement. "China's environmental crisis is one of the most pressing challenges to emerge from the country's rapid industrialization. Its economic rise, in which GDP grew on average 10% each year for more than a decade, has come at the expense of its environment and public health (Albert & Xu 2016). China has significantly reduce poverty and provides countless citizens with the tools needed to provide for themselves, but the culmination of environmental concerns and political inaction has prevented millions of Chinese people from exercising fundamental rights. Elizabeth Economy argues the government constantly violates rights such as "the right to breathe clean air, to access clean water, to participate in the decision-making process on industrial development that affect their livelihood" (Economy 2003). Among China's many environmental concerns, water depletion and air quality are among the most severe challenges that negatively impact the quality of human life and the environment.

Unregulated discharge of harmful chemicals has led to severe water shortages across China. "China is home to 20 percent of the world's population but only 7 percent of its fresh water sources...approximately two-thirds of China's roughly 660 cities suffer from water shortages" (Albert & Xu 2016). The shortage of water has forced many of China's people and grasslands to suffer from lack of proper hydration. Eleanor Albert and Beina Xu write, "Combined with negligent farming practices, overgrazing, and the effects of climate change, the water crisis has turned much of China's arable land into desert. About 1.05 million square miles of China's landmass are undergoing desertification, affecting more than 400 million people"

(Albert & Xu 2016). Additionally, “pollution has also been linked to the proliferation of acute and chronic diseases; estimates suggest that around 11 percent of digestive-system cancers in China may stem from unsafe drinking water” (Albert & Xu 2016).

Poor air quality is not only one of the most omnipresent but also the most prevailing environment challenges that Chinese citizens have been enduring for decades. “Air pollution contributes to an estimated 1.2 million premature deaths in China annually...poor air quality in Chinese cities causes significant health complications, including respiratory, cardiovascular, and cerebrovascular diseases. (Albert & Xu 2016). Parts of China continue to experience an influx in air quality, depending on the intensity of automobile traffic, factory usage, and cold temperature. On any given day, parts of China or cities in neighboring countries can experience poor air quality from released pollutants from factories and automobiles in China. Smog, caused by the release of particulate matter from cars and buildings is a significant challenge that has prevented individuals from leaving their homes. “Beijing experienced more than 200 days of air pollution categorized as “unhealthy” or worse in 2014, including 21 days that were “hazardous” – while only about 10 days were considered ‘good’”. (Gao 2015). George Gao, of “Pew Research Center” emphasizes the severity and number of days Beijing was forced to declare a “red alert” and shut down all schools, construction, business, and significantly limit car traffic (Gao 2015).

Figure 2: Air Quality in Beijing in 2014

**Most days, air quality in Beijing is unhealthy or worse***Daily average air quality at the U.S. Embassy in Beijing (2014)*

Note: Data collected by U.S. Embassy in Beijing and are not fully verified or validated. Data not available for 32 days in 2014. Categories based on 2012 EPA standards. China collects its own PM<sub>2.5</sub> (fine particulate) data and has different standards. Source: U.S. Department of State.

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According to “the Council of Foreign Relations” At least 80 percent of China’s 367 cities with real-time air quality monitoring failed to meet national small-particle pollution standards during the first three quarters of 2015 (Albert & Xu 2016). The World Bank predicted that unless aggressive action is taken, the health costs of exposure to particulates alone will triple to \$98 billion by the year 2020, with the costs of other environmental threats similarly rising (Economy 2003). As of 2008, health concerns due to poor environmental conditions drastically increased over time since the early 2000s. The World Health Organization (WHO) shows number of deaths related to and/or caused by poor air quality in China as of 2008.



Figure 3: Air Pollution Related Deaths by Country in 2008

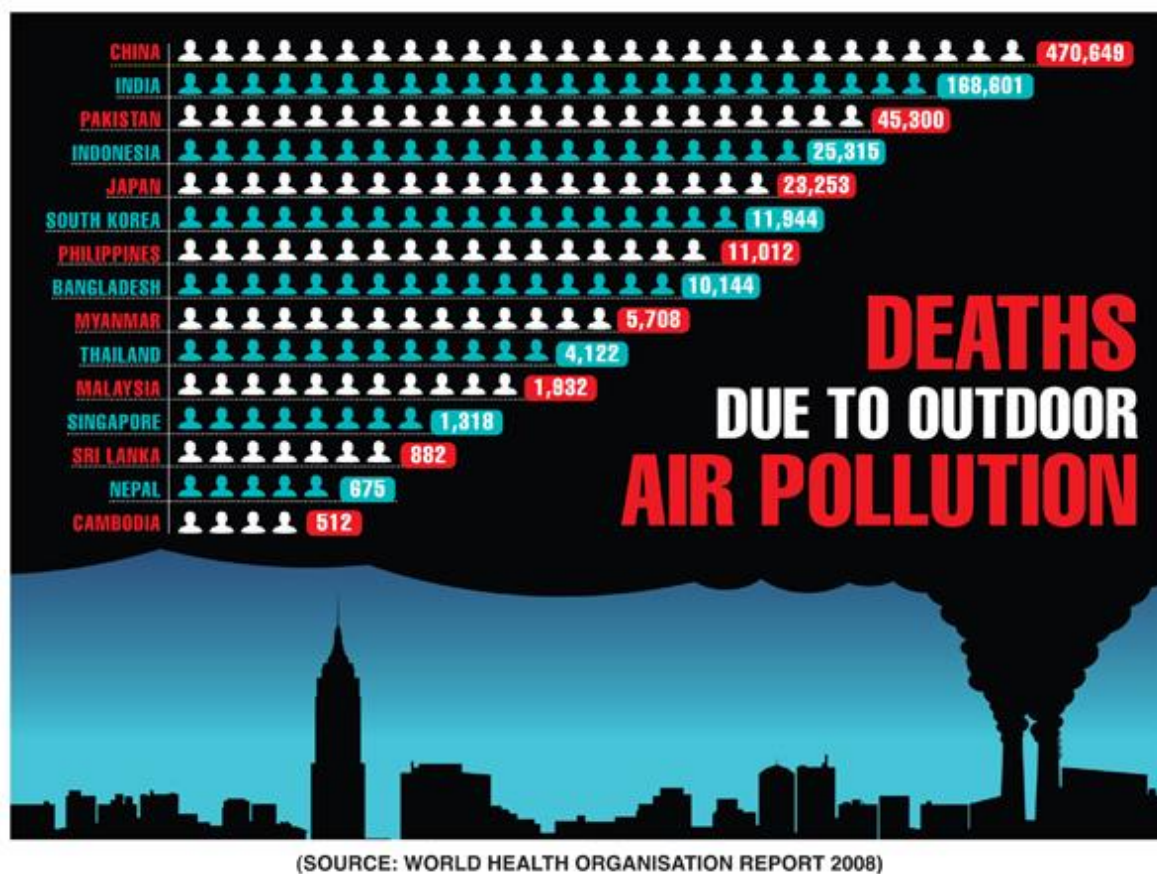


Figure 3 shows that China surpasses every other nation in the number of deaths due to air pollution by at least three times. More recently, the disparity in deaths between China and India has significantly reduced because of significant improvements in pollution control in China. Overall, environmental degradation has reached an apex in China that has forced the millions to suffer from poor health; the consequences of such negligent behavior has also led to significant migration away from China, a halt in economic productivity, increased costs to national GDP for environmental cleanups, and social unrest.

In recent years, negligence by the Chinese government on environmental protection has been met with social discontent in the form of protests and calls for action by the Chinese population, which has played a positive role in shifting China's prioritization of the environment.

Chinese civilians have been calling for better awareness and care for the environmental as well as immediate shifts in the political agenda to reflect a heightened commitment for quality of the environment and therefore the human health of the population. The number of abrupt environmental protests, both peaceful and violent, rose in 2013 to 712 cases, which is a 31% increase from the 2012 (Albert & Xu 2016). Farmers and villages, whose farms and produce were ruined by factory discharges and irresponsible business forced such individuals to feel that they have no other choice but to protest, and in some cases, violently (Economy 2003).

For an authoritarian regime, social unrest, mass and frequent violent protests, as well as a common rallying issue such as poor living quality, are all motives for a government to instate political change before social instability and conflict within the nation escalates. Such social upheaval could challenge the ruling regime's legitimacy, which could lead to armed conflict and perhaps even a revolution. For this very reason in the past decade or so, China has drastically altered its political agenda by propelling environmental protection and enhancement to the forefront of government priorities. President Xi's proclaimed "War on Pollution" announced by Chinese leadership about ten years ago has resulted in several five-year economic plans dedicated to environmental improvement and sustainable growth, the implementation of an emissions trade credit system, and a reduction of heavy usage of coal and oil for renewables, which have all been immensely effective at amending the unintentional negative consequences produced by China's long pursuit of economic growth.

Recently, China enforced several five-year plans, one in 2011 and another in 2016, whose goals were simple: shift the country away its irresponsible, environmentally harmful behaviors and shift towards cleaner and greener China, without sacrificing economic growth. In fact, one of the key aspects of China's new focus is the desire to enhance future growth with environmentally

conscious measures. A sustainable future is now China's new goal. China's new stance on economy and environment represents a major shift in belief from once a nation who sacrificed environmental standards for the economic development to now a nation that intends to promote the former in order to develop the latter. In fact, "In 2009, China's investment in clean energy technology was nearly twice that of the United States (\$34.6 billion vs. \$18.6 billion), ranking the nation number one in investment globally" (Remais 2011). These plans, especially China's thirteenth five-year plan (2016-2020), often embraced unfamiliar ideas for China, such as "policy guidance from the center, devolution of power to local governments, cooperation with the international community, the development of grassroots environmentalism, and the enhancement of the legal system" (Economy 2003).

Arguably, China's most recent five year plans were the most substantial in directly altering environmental legislation that effectively improved environmental quality. ZhongXiang Zhang explains, "China's capital intensive, export-oriented growth model over the past decades is no longer sustainable. Accordingly, China's 12<sup>th</sup> five-year economic plan focuses on rebalancing an export-driven economy and inclusive growth, aiming for reliance less on trade and more on domestic consumption to drive its economic growth" (Zang 2013). While, China's 13<sup>th</sup> five-year economic plan called for "a period of more moderate economic growth, continued economic rebalancing away from heavy industry and toward services, and a renewed commitment to environmental issues and clean energy" (Johnson 2015). China's 13<sup>th</sup> five-year plan incorporated the implementation of a cap and trade program that would create the world's largest emission credit trade market. Similar to the U.S., it involves the buying and selling of unused emission credits with a gradual reduction in the maximum number of credits allowed in order to incentive industries to operate more cleanly (Bradsher and Friedman 2017). A cap and

trade system is one of many mechanisms through which the nation can limit its emissions; companies can pay to pollute so long as they stay within the maximum credits awarded to them by the government and those that pollute less can eventually sell their credits to dirtier companies. According to the environmental defense fund, China's market would amount to over 3.3 billion tons of annual carbon dioxide emissions, far more than Europe's 2 billion ton market (Bradsher and Friedman 2017).

Administratively, China's government integrated major shifts in business, companies and everyday life with the hopes of drastically reducing emissions and preventing climate change. The government has promised to spend over \$275 billion over the next five years to clean up the air and \$333 billion to improve water pollution (Albert & Xu 2016). Furthermore, based on the improvements and trends seen already, China is projected to hit its peak carbon emissions by 2030 and will receive 20 percent of total energy from renewables by 2030 (Albert & Xu 2016). More recently, to reduce emission from automobile traffic, China recalled and dismissed the buying and selling of over 500 car models that do not meet newly passed fuel economy standards. Hiroko Tabuchi of the *New York Times* comments, "The Chinese government has already become the world's biggest supporter of electric cars, offering automakers numerous incentives for producing so-called new energy vehicles. Those incentives are set to decrease by 2020, to be replaced by quotas for the number of clean cars automakers must sell" (Tabuchi 2018).

Following the shift in Chinese political agenda and the mobilization of many promises by the government, China has experienced significant improvement in both water and air quality. Keith Johnson writes in *Foreign Policy* that, "China's economic rebalancing away from dirty, heavy industries and its newfound concern for the environment are real and producing tangible

results sooner than had been expected. That translates into an economy that is burning less coal and spitting out fewer emissions than even a few months ago” (Johnson 2015). In Beijing, as of 2017, air pollution drastically reduced by 53 percent which resulted in a decrease in premature deaths across China by as many as 160,000 (Myers 2018). China is continuing to experience improved environmental conditions in various sectors. Dissimilar from the late twentieth century, China’s environmental efforts are generally supported by the international community and even used for a basis for environmental legislation in other countries. Justin V. Remais and Zhang Junfeng explain, “Even as China wrestles with enormous environmental challenges, developed and developing country policy makers stand to learn from China’s rapid advancement in these and other areas” (Remais & Junfeng 2011)

China’s swift, yet enormous developments not only represent a change in the manner it conducts societal behavior, but also a shift in China’s perception by the international community. Previously, China’s passion for strictly economic development not only hindered its internal stability but also its possibilities of aspiring to an international standing of an innovative and progressive global leader.

Despite China’s numerous environmental challenges, the country is becoming a global leader in clean energy and sustainability; in fact, China led climate change negotiations at the 2015 UN Climate Conference in Paris where 195 countries followed with the signing of the landmark Paris Agreement (Albert & Xu 2016). Overall, China’s recent transition to clean energy not only offers improved environmental and human health, but also facilitates a shift in global leadership on matters relating to energy and sustainability from the U.S to China.

### **The Strengths and Weaknesses of Both Systems**

The U.S. and China have both proven by their past and recent actions that both democratic and non-democratic nations can significantly create and implement effective domestic and international environmental policy when such nations have the ability and willingness to do so. The fundamental differences that separate democracy and authoritarianism lead to very distinct methodologies and notions of how to govern a society. At times, when the government has the ability and willingness to make change, both systems have proven their capacity to improve the common good. However, the instances when each government has chosen to act in contradiction to what is best for the environment, countless number of people have directly and indirectly suffered.

As a governmental system, democracy is fundamentally defensive in nature; the basic tenets of a democracy are placed to prevent one ruler or one council from gaining absolute power and enforcing their will on the majority. The separation of power and the system of checks and balances prevents a president or congress from irrationally enforcing policy decisions that would otherwise drastically harm the environment and therefore the population. Even when there is a president and/or congress who refuses to acknowledge and/or take action against environmental degradation, several different influential actors like the courts, lobbying groups, international community, and population can interfere and impinge on the political decision making process. For these specific reasons, democratic institutions can have a direct positive correlation with environmental quality (Romuald 2011).

First, in a democracy those elected to public offices have a direct duty and necessity to reflect the needs of their constituents in order to gain reelection. Payne explains, “Democratic governments are more accountable. Thus, the environmental concerns of constituents cannot be ignored” (Payne 1995). The opinions and approval of the common people directly makes an

impression on the political agenda both at the local and federal level. For democratic leaders, accountability for their actions as well as the high potential for disapproval by constituents can both act as deterrents for political leaders tempted with the idea of using their status for individual gains, despite consequences for the majority. Winslow adds, "In as much as elites tend to benefit from environmental degradation, while the costs are spread throughout the population, the sharing of power that occurs in democratic regimes can act to curb the degrading activities of the few" (Winslow 2005).

Second, the basic liberties and civil society associated with most democracies empower the common people to openly state their displeasure with their government while simultaneously creates avenues for political protest through rights to independent media, free speech and assembly. Public involvement in the political arena can be a powerful tool for changing the agenda, amending issues brought on and/or ignored by the government, and creating social change. "With democracy, citizens are more aware of environment problems (freedom of media). They can also express their preferences for environment (freedom of expression) and create lobbying groups (freedom of association). Political leaders are prompted (rights to vote) to implement environmental policies at national and international levels" (Payne 1995).

Independent, unbiased information as well the right the freely express oneself without the fear of punishment are democratic instruments geared to enforcing environmental policy despite views of elected officials. "In democracies, citizens are better informed about the environment, can better express their concerns about the environment, can organize amongst each other around those concerns, and finally put pressure on governments to improve environmental conditions" (Gallagher 2008).

Third, in conjunction with personal freedoms and civil liberty, the judicial system collectively offer opportunities for individual opinions to unite together to become a common voice in a powerful, policy altering setting. Environmentalist organizations like the Audubon Society and the Sierra Club can play an active role in shaping local and federal policy through the means of education and outreach, demonstration, political protest, and litigation. Finally, the support as well as the peer-pressure from the international community to enact environmental legislation can act as a another tool for enforcing environmental policy. Democracies are more likely to engage in and sign environmental treaties that non-democratic nations (Payne 1995). Non-governmental organizations (NGO's) "can work to help inform the public about environmental problems, can act as watchdogs on public agencies, and can directly lobby members of government" (Winslow 2005).

However, democracies are imperfect systems; they fail in many ways to effectively and rapidly promote the common good for a multitude of reasons. Democratic procedures are slow-acting, often requiring vetting from several offices, chambers, subcommittees, and the public. Furthermore, political legislation often goes through review periods where any group of institution can challenge the wording or methods of a prescribed policy, which, if holds weight, will require more time and development before implementation. Schmitter and Karl explain, "Democracies are not necessarily more efficient administratively. Their capacity to make decisions may even be slower than that of the regimes they replace, if only because more actors must be consulted" (1991, 85). Because of its defensive nature, creating policy change in a democracy is often not a swift process, formulating policy, gaining majority approval, implementing, as well as assessing and making adjustments of the policy is a very long process that other governments simply do not incorporate in their policy making process.



Additionally, the freedoms ensured by true democracies is beneficial in that it allows citizens to develop their beliefs and promote change within the community; however, often at times these freedoms can impinge on the development of environmental legislation.

Bipartisanship and party views on complicated issues, climate change and environmental standards vs. economic growth, play significant roles in the implementation of environmental policy. For this very reason, President Obama was unable to ratify the Paris Agreement as a nation-wide treaty, but instead, an agreement between the international community and his administration by an executive order (Stonedale 2016). This bipartisan dilemma is also evident within the current U.S. administration where the President and majority of Congress promote a false ideology on environmental health and climate change due mostly to direct lobbying from companies whose profit margins would be severely reduced by strict environmental legislation. As democracy and capitalism promote one another, democracies are essentially economic markets where economic development, lobbying and markets are persuasive and imperative (Romuald 2011). Dryzek argues “Democracies are not considered as protecting environment quality as they are supposed to satisfy the preferences of markets and lobbying groups which aims at maximizing their economic profit that is not in favour of a better environment quality.” (Dryzek 1987, 5).

Finally, democratic political leaders do not always have the best interest of the environment in mind and often prefer more economically focused options, which requires a large amount of resources and harms the quality of the environment. Economic growth and the promotion of business are essential for the advancement of a democracy. Democracies tend to cooperate with one another and often, at times, engage in international cooperation, trade, and globalization which further exhausts national resources (Gallagher 2008). Basic freedoms and

competitive, open markets encourages businesses and corporations to overexploit the nature for valuable resources. “As democracy is dependent on economic development, and since economic growth and prosperity generally result in environmental pollution and ecological destruction, democracy would not necessarily be protective of the environment (Desai, 1989, 11)

Contradictory to the basic tents of democracy, authoritarian regimes, which support less freedoms and more centralized power, can be more efficient at enacting environmental policy because of the imbalance of power. Policy implementation and amendment can happen much quicker within authoritarian nations as opposed to democracies. The centralization of power in one individual or one group significantly reduces the time and political jostling needed to approve and alter legislation in democracies (Huang 2018). With the appropriate morals and/or motives, an authoritarian president or dictator can choose to completely amend or destroy the environmental conditions of a nation within a single generation due to the imbalance of power limited political hurdles.

Political opposition can significantly delay the implementation of political reform, but within an authoritarian regime, there is limited opposition from politicians, civilians, and industry. Within China, and many other authoritarian regimes, the absence of second major political parties and oppositional lobbyist groups significantly alters the complexity of the political realm. The absence of opposing political broadcasting in the media, intense lobbying, filibusters, etc. allows a president to rule without limitations or interruptions. However, it is also important to note that often within authoritarian regimes, the leaders of these systems must constantly keep military officials, regional leaders, and other allied elites in his favor in order to achieve compliance and internal stability. The “New York Times” explains, “The U.S. Clean Air Act is widely regarded as having produced large reductions in air pollution. In the four years

after its 1970 enactment, American air pollution declined by 20 percent on average. But it took about a dozen years and the 1981-1982 recession for the United States to achieve the 32 percent reduction China has achieved in just four years” (Greenstone 2018). Despite major differences in sustainable technology between the U.S. in 1970s vs. present day China, this statistic demonstrates the speediness and effectiveness of non-authoritarian regimes in enacting policy.

The restriction of freedoms further empowers the ruling system by prohibiting individuals to not only gain independent, unbiased information not altered by the government and protest and/or challenge the direction of the country. Freedoms relating to the economic development are also limited in that they do not play as much of a role in politics. In fact, industries often are mandated by leadership to make adjustments within the company and the business operates to reflect the political agenda. The improvements that China has made in air quality have greatly been attributed to engineering-style instructions given by the government, rather than allowing markets to find the least expensive schemes to limit pollution (Greenstone 2018). Major industries were told to make significant changes to assist with policy goals; power plant companies reduced emissions of existing plants immediately before transitioning to natural gas in the future (Greenstone 2018).

Despite efficiency advantages, there are many dangers associated with large-scale absolute authoritarian regimes. Firstly, if the perfect ruler can drastically improve environmental quality in an authoritarian regime, the most imperfect or negligent ruler can significantly destroy environmental conditions for economic and military advancement. The decades when Chinese policy, innovation, and economics was fixated on rapid economic growth, despite negative environmental consequences serves as a paramount for this phenomenon. In a democracy, institutionalized separation of power prevents such circumstances, but an authoritarian regime

can foster an irresponsible, negligent ruler. The lack of accountability paralleled with the concentration of power in an individual or small group of elites may encourage policy that benefits only the elite and ruling class but harms the environment (Winslow 2005). Deacon argues, “Autocratic regimes are led by political elites who monopolize and hold large share of national incomes and revenues. The implementation of rigorous environmental policies can lower the levels of production, income and consumption, which, in turn impose a higher cost on the elite in an autocracy” (1999)

Secondly, for authoritarian regimes, swift policy changes can be both beneficial and problematic, risky, experimental public policy can be very wasteful, unsafe, and lead to major setbacks. Unintended setbacks to drastic legislation enforced by authoritarian regimes can significantly endanger citizens and cost the country substantial amounts of money to correct. Huang reports, “To reduce the levels of hazardous particles known as PM2.5, the Chinese authorities started to convert coal-generated heating to gas or electric heating. But in the northern province of Hebei, overzealous local officials put the changes in place, exceeding government targets, demand for the new fuels suddenly surged — creating shortages that left millions without proper heating in freezing temperatures (2018). Coal burning boiler heaters were removed without cleaner replacements led to thousands of families, business, and students without heat in winter months. Aggressive programs enacted to quickly meet politically set environmental demands have escalated to extraordinary and perhaps even impulsive decisions.

Overall, there are strengths and weaknesses to both forms of government when enacting environmental policy both domestically and internationally. These advantages and disadvantages have resulted in very distinct paths for both the U.S. and China in terms of environmental quality, sustainability, as well as global perception and leadership. For the U.S., its once

celebrated and encouraging role as global leader in environmental policy has halted in recent years. Due to intense lobbying, bipartisanship, and climate change doubters, the United States' environmental agenda has little to show despite pleading from environmentalists and concerned citizens. *USA Today* explains, "President Trump's decision to pull the United States out of the Paris Climate Accord is a stunning abdication of American leadership and a grave threat to our planet's future" (Ledyard 2017). House Minority Leader Nancy Pelosi stated, "In walking away from this agreement, the President is denying scientific truths, removing safeguards that protect our health and our environment, protecting polluters and their dirty energy agenda, and threatening our national and global security" (Ledyard 2017). With the recent signings by both Nicaragua and civil war-torn Syria, the U.S. currently stands as the only UN state to holdout from the Paris Agreement. This decision halts the United States' ability to evolve its economy and it prevents the country from becoming less reliant on foreign coal and oil. Furthermore, it "casts doubt on the ability of the international community to meet the emission goals that were set two years ago" (Breedon 2017). Finally, President Trump's pulling out of the Paris Agreement, despite former President Barack Obama's ambitions and promises, severely damages the ability for other countries to trust the word of an American president for longer than the term of his or her presidency. Moreover, the move negates, and will continue to negate, the international perception of America as progressive, powerful global leader that former administrations fostered for decades. If the current U.S. administration continues to holdout of Paris Agreement, promote big business despite environmental concerns, pollute as much as it does now in the future, and suspend the shift to renewables, not only will the perception of U.S., but also the health and safety of its citizens will continue to deteriorate overtime.

China, on the other hand, has greatly benefited from its recent developments with instituting effective environmental policy both in terms of social welfare and international status. After decades of restless pursuit for economic development and regional hegemony, the international community viewed China rather negatively, because China's actions demonstrated that it was more willing to damage the global common good than to promote it (Breedon, 2017). As defined by the General Assembly of the United Nations, "Sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (General Assembly of the United Nations). This paper contends that achieving sustainable development would significantly free China of its reliance on foreign energy, assist with the stabilization of its economy, and most importantly propel Chinese economy to regional supremacy. Furthermore, this report holds that China's most recent quest for sustainable development will provide healthy social welfare, reduce spending overtime, and improve environmental quality across the country. Perhaps, most significantly, this shift will earn China greater influence on the global stage, especially at international conferences, summits, and negotiations focuses on improving environmental conditions and climate change.

### **Conclusion and Implications for the Future**

In conclusion, there is no definitive answer as to whether a democratic or nondemocratic model is more effective at adopting effective environmental policy because there are too many external variables that hold weight. The United States and China's past and the recent reversal of their roles has proven that a government willingness to make change is equally as important as its ability to do so. A government must not only have the capacity, but also the motives to

implement effective environmental policy, whether the pressure comes from the international community, civil society, poor environmental conditions, or for pursuit of enhanced economy. The answer as to which system is more inclined to act varies throughout time based on beliefs and political agenda of leadership. In the past, democratic nations and the U.S. over China would be a clear answer, but today, there is an argument for China over the United States, and therefore an authoritarian regime over a democracy. However, in the future, the roles of China and the U.S. can stay the same or completely reverse yet again under different leadership. In varying degrees, the executive powers in both systems have the capacity to alter the political agenda of their respective nations. For this very reason, the U.S. can regain its global leadership under a different administration and Chinese leadership can choose to continue or end the pursuit of sustainable development. However, looking forward, it appears that China will continue to implement pro-environmental legislations.

Overall, in recent years, the commitment by the U.S. to improving environmental conditions has passed on to China, which has resulted in the drastic shift for both nations. China is rapidly becoming the vanguard of implementing environment policy, while the United States is failing to keep pace with China. Most importantly, for these very reasons, the United States is relinquishing its global leadership in environmental policy to China.