

Environmental Degradation as a Result of Economic Development and its Impact on Society



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Abstract

In just 30 years, China has evolved through a process of economic development that continues to be unrivaled by the rest of the world. Since Deng Xiaopeng's Open Door Policy, China has reached an average annual GDP growth rate of 10% and has lifted billions of people out of poverty because of it. However economic progress also came with heavy costs for the environment. For example in Hong Kong alone, air pollution caused an average of 30,000 deaths per year (Wong). The effects of air pollution and other health hazards related to economic development have a disproportionately larger effect on people of lower socio-economic status. The marginalized poor of China suffer from the negative externalities that come with development but reap very little of the benefits. These issues have come to complement economic development and in many ways have caused social unrest and political instability in many regions throughout China. Disruptive actions such as protests have increased tenfold since 1994 from 8,700 to 87,000 in 2005(Storey). Even with economic growth, the Chinese appear to be dissatisfied with the Communist Party, and reactions towards protests and demonstrations have been mixed at best. Using a qualitative approach, the focus of my research capstone is to analyze whether irresponsible economic development shown through environmental pollution can cause political instability and the role of the Chinese government in response to citizens' concerns. My analysis using the adaptation theory shows that the Communist Party is capable of adapting its role in order to meet the needs of its people.

Theoretical Approach: The Adaptation Model

The roots of the adaption model stems from adaption theory. This theory was originally coined by Charles Darwin, and encompasses the idea of the “survival of the fittest”. By applying this theory to mammal species, Charles Darwin discovered the process of scientific evolution. He found that organisms have an ability to adapt to changes in its environment and adjust over time to survive so that each generation is better suited to their environment.

In relation to China, the adaptation theory states that the survival and the legitimacy of the Chinese Communist Party is dependent on its ability to adapt and respond to challenges. Historically, China’s revolution played a large part in influencing a guerilla style policy-making approach and this adaptive approach has continued to frame the way policy decisions are made today. Heilmann and Perry characterize the guerrilla policy style that allows for adaptive governance in their chapter *Embracing Uncertainty*. This means that policy-making is kept fluid allowing for continual improvisations, adjustments, and pilot efforts that take into account practical experience. Meanwhile, strategic decisions are made through top leadership while operationalization and implementation are left for local governments to take into account. This fluid policy style allows for the Chinese government to adapt to different challenges. According to Hellman and Perry, the succession of post Mao leaders have managed to fashion a surprisingly adaptive pattern of authoritarian rule capable so far of withstanding challenges, including growing social and spatial inequalities. (Heilmann and Perry). Therefore my theoretical approach is to analyze whether the challenges of sustainable development is something that the CCP is capable of adapting to.

Introduction

When I was growing up, we didn't have luxuries like televisions or Wii sets. We didn't celebrate birthdays like kids do here. I remember when I was young; we would be lucky to get an egg every year for Chinese New Year. We didn't even have shoes, let alone brand name Nikes. This was the picture that my mother had painted for me of China as a young girl. People had rationed their foods and even with frugal spending habits, few families were able to meet their basic needs.

Last year when I visited China, the vivid image my mother instilled in me of immense poverty with dirt floors and bare feet simply seemed inaccurate. As I walked through the streets of Beijing I was constantly surrounded by the incessant noise of bustling cars, busy street vendors, and the endless blocks of department stores. In just 30 years, China had evolved through a process of economic development that continues to be unrivaled by the rest of the world, and this process of development was easily visible throughout the streets of China.

With the start of the Open Door Policy by Premier Deng XiaoPeng, China was able to reach an average annual GDP growth rate of 10% for the past thirty years. China started to adopt market forces, which corrected many of the inefficiencies around allocation and distribution. China also started to encourage international trade, which led to economic growth through comparative advantage. The process of implementing market liberalization and privatization policies allowed for gradual economic development, which ultimately lifted billions of Chinese people out of poverty.

However, this economic development also caused contention within China. Economic progress also came with its drawbacks such as environmental pollution and income disparities. The issue of air pollution in China is a large concern due to the increasing number of mortality rates related to air pollution. In Hong Kong alone, air pollution caused an average of 30,000 deaths per year (Wong). The effects of air pollution and other health hazards related to economic development have a disproportionately larger effect on people of lower socio-economic status. The marginalized poor of China suffer from the negative externalities that come with development but reap very little of the benefits. These issues have come to

complement economic development and in many ways have caused social unrest and political instability in many regions throughout China. Disruptive actions such as protests have increased tenfold since 1994 from 8,700 to 87,000 in 2005.

(Storey) Even with economic growth, the Chinese appear to be dissatisfied with the Communist Party, and reactions towards protests and demonstrations have been mixed at best.

I plan to analyze whether or not irresponsible economic development shown through environmental pollution can cause political instability. I hypothesize that there is a strong correlation between environmental pollution and economic development and this has made China more politically unstable. I also explore how the Chinese government has responded to the environmental disputes, and why there continues to be incongruences between policy and enforcement.

Research Question or Puzzle

Many questions remained unanswered after coming back from my study abroad experience in China. My internship with the Economic Observer, a newspaper focusing on the Chinese Economy gave me a realization of the many social ills within China and left me with questions that continued to spur my curiosity. These issues included the income gap, the hukou system, cancer villages, drought, unemployment, social security, the Jasmine Revolution, air pollution and so on. After analyzing all of these issues, economic development seemed to be a common link.

China is constantly being applauded for their economic development but the problems that stem from economic development don't seem to gain as much attention. On a surface level, I noticed the web of connections. A progression towards a free market system inevitably causes inequalities in terms of distribution leading to income gaps. Economic development without environmental regulation causes air pollution leading to cancer villages. The hukou system, which restricts migration, paired with regional disparities leads a large number of migrants without social security. Economic development also allowed for improved living standards and higher educational attainment, but the supply of jobs for college graduates did not necessarily meet the demand for them. These issues would surface but political discourse still seemed limited because criticism was not received well by the Chinese Communist Party. Daily reports of missing dissidents often times made the news, and even popular figures like Ai Wei Wei would go missing. My snapshot of China inspired my capstone project to reflect how irresponsible economic development might cause political instability.

Originally, I had planned to measure the effects of economic development through income gaps, environmental degradation, and regional disparity to encompass many of the issues that I felt might cause political instability. After realizing that the scope of this paper would simply be too large, I decided to narrow down my research question and decided to focus on environmental pollution.

I then realized that linking environmental pollution with political instability would lead to a host of questions and necessary causalities. For example, is there a

connection between economic development and environmental pollution in the case of China? What are the health effects associated with environmental pollution and if so who are impacted by it? If environmental pollution is in fact associated with economic development and this has proceeded on for over 30 decades, what has the response been? What has the government done to address the problems if at all?

I make the assumption that economic development is associated with environmental pollution and focus primarily on the effects of environmental pollution and its impact on political instability. Therefore my research question is: Do the effects of environmental pollution cause political instability in China?

Establishment of Causal Relationships in Developing Paper

Thesis: When Economic Development occurs irresponsibly, this causes political instability



Part I : Economic Development Causes Environmental Pollution



Part II: Environmental Pollution causes negative health effects and this disproportionately affects people of poverty



Part III: Knowledge of environmental pollution and its impacts cause commotion among citizens. With out the proper form of political discourse this result to protest.



Part IV: CCP tries to adapt to the needs of the people by making short term policies to gain the support of the populace but may not necessarily be effective in enforcing those polices. The Chinese government continues forward, as shown through the adaptation model.

Part I: Economic Development and Environmental Pollution

As economic development progresses the production capacity and living standards for people improve, leading to a higher demand for energy. This process of industrialization isn't any different from that of other countries, where the environment is often sacrificed in order to pave way for economic development. For the US, this period started during the late 19th century and for China this process was marked by the Open Door Policy in 1978. In China this period of growth and industrialization has lasted for the past three decades and has started to leave its ecological mark. Today, China's environment is struggling to support its' large and continually growing population and its' constant demand for energy. Economic development correlates with environmental pollution due to the increasing demand for energy and the heavy use of coal and oil in order to satisfy those energy needs.

While economic progress in China has been successful in lifting the largest number of people out of poverty in the past decade, China has also grown to have higher living standards for its people. This has been apparent through the transportation industry. While 30 years ago, most people could barely afford bicycles, the middle-upper class in China today often own a car. This growing trend is shown through Yuefe Jin's analysis of automobiles and energy conservation in China. "Within a period of 10 years, China's automobile output rose rapidly from 500,000 in 1990 to 3.25 million in 2002, with an average annual growth rate of close to 13% (Jin). This number has quadrupled in less than ten years. In 2009, vehicle production reached 13.79 million and sales reached 13.64 million at an increase of more than 45%, making China the world's largest automobile market (Policy Recommendations for Supporting the Development of Low Carbon Automotive Fuels in China). The standards of living of Chinese citizens are increasing, and the effects are shown through their material consumption. The energy needs necessary to satisfy these demands however are enormous.

This rapid increase in the demand for automobiles has implications for the use of energy, oil consumption, and green house gas emissions. The increasing demand for automobiles means a growing demand for oil. According to the International Energy Agency (IEA) the growth in automobile demands means that

automotive energy consumption will increase; and by 2030 China's automobile energy consumption is likely to surpass 400 Mt of fossil fuels (Policy Recommendations). Currently, 95% of China's automotive fuels are fossil-sourced gasoline and diesel and the demand for oil is constantly rising as shown below (Policy Recommendations). By 2020 transportation is expected to consume over 25% of China's total energy, and imported oil will occupy 60% of China's total oil consumption (Yang).

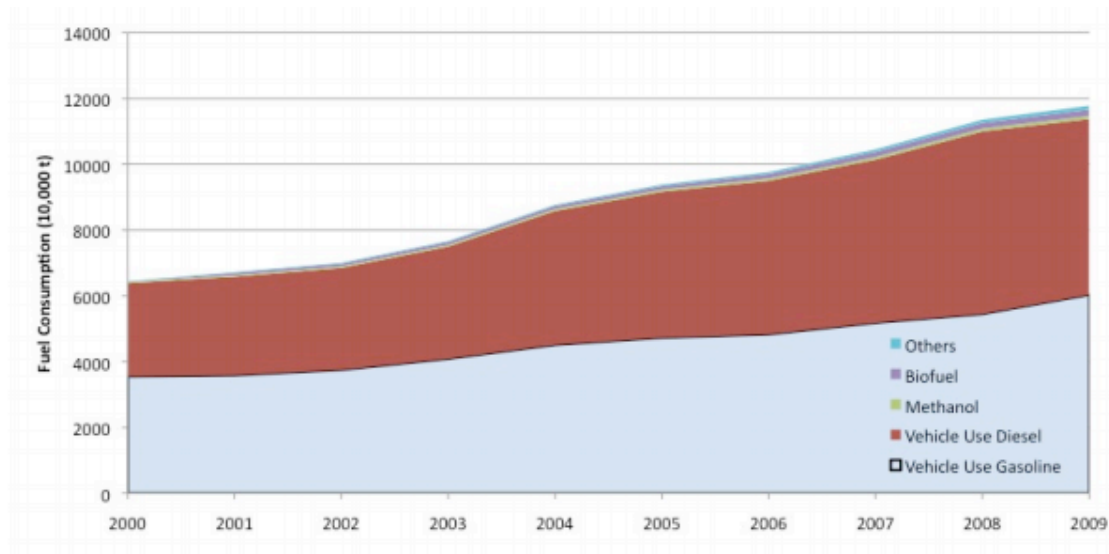


Figure 2 Annual automotive fuel consumption (China, 2000-2009)

Source: Automotive Industry Annual Report, China Petroleum and Chemical Industry Association, National Statistics Bureau of China – Compiled by iCET

The use of fossil fuels as a source of energy is increasing at a rapid rate, which causes negative implications for the environment. The increasing demand for oil means increasing the output of green house gas emissions through carbon dioxide. In 2009, GHG emissions caused from the consumption of automotive fuels in China amounted 480 million tons of CO₂ emissions, an increase of 80% from 2000(Policy Recommendations).

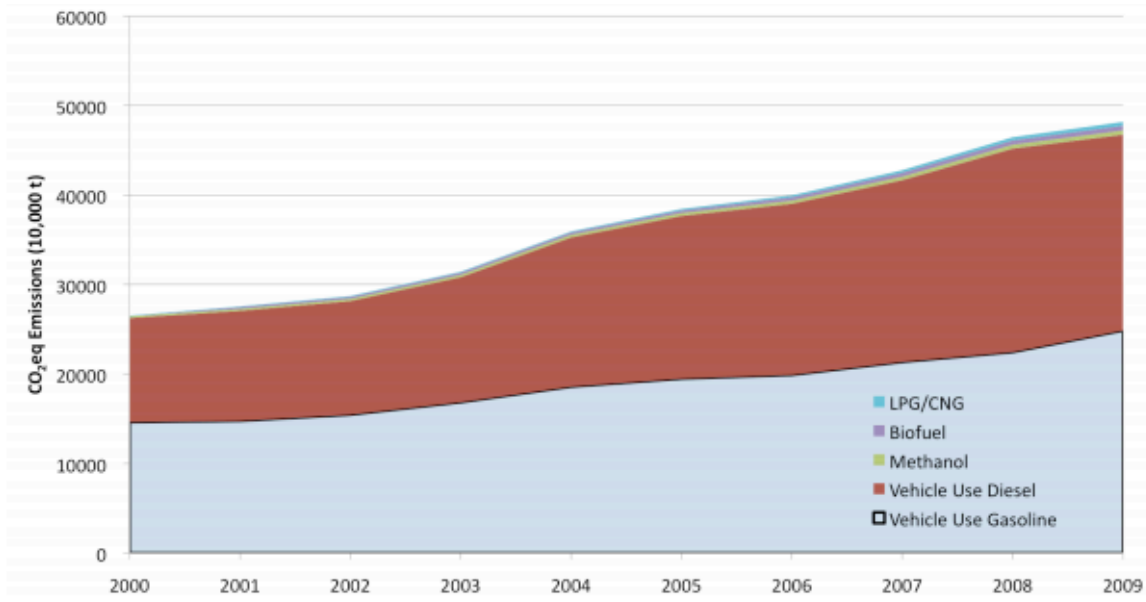


Figure 3 Annual Transportation Sector GHG emissions (China, 2000-2009)

Source: iCET, based on data from sources above

The increased living standards associated with economic development have meant a higher demand for material goods, and this growth has been represented through the increasing demand for automobiles in China. Yet as automobile demand increases, so does the demand for oil, which leads to increased carbon dioxide emissions. Economic development therefore does have a negative effect towards the environment; this is also shown through the use of coal as a source of energy.

China's economic development has meant a surge in energy needs and coal has been China's predominant source of energy for the last 30 years. The use of coal is popular in China due to its relatively cheap market price and its large supply. In a competitive market the cheapest resources win the largest market share (Yang, 6), and for China the large-scale use of coal has helped to fuel China's growing economy. The break down of energy use in 2008 according to the US Energy Information Administration showed that coal made up 71% of total energy consumption, oil made up 19%, hydroelectric power made up 6% and natural gas made up 3%(US EIA). Therefore, China's major source of energy is coal. In 2009, China consumed an estimated 3.5 billion tons of coal, which made up 46 percent of the world total (US EIA).

Coal use is also a popular in China because it is a relatively abundant natural resource within China. China has the third largest coal reserves in the world and since 1989, China was ranked first in its total production of coal (Thompson). Since the Chinese people rely heavily on the use of coal, the government has been actively supporting the coal industry. According to the 12th Five Year Plan, the Chinese government plans to consolidate the coal sector in order to fully utilize the coal resources within China (US EIA). China is slowly increasing its production and consumption of coal and although the market price of coal is inexpensive, the costs associated with coal use to public health and the environment is extremely high.

The effects of coal can be measured through air pollution by looking at levels of carbon dioxide, sulfur dioxide, and nitrogen oxide. According to the a National Energy and Strategy Policy Report in 2004, the burning of coal accounts for 70% of CO₂ emissions, 90% of sulfur dioxide emissions, and 67% of nitrogen oxide emissions (Grumbine). By 2020, SO₂ levels are projected to increase by 150% beyond what Chinese experts describe as the maximum capacity for the entire country (Grumbine), and for NO₂, projections to 2020 are expected to increase by 86% (Grumbine). These numbers show that the increasing levels of air pollution will likely cause the acidification of the land, and will result in negative ecological impacts.

The connection between economic development and environmental pollution are apparent through the increasing levels of emissions. This is caused both by the increasing level of industrial output and rising living standards. More energy is constantly needed to satisfy the growing economy and this often comes at the cost of the environment.

Part II: Environmental pollution and Negative Health Effects

Economic development causes increasing energy demands, and in China most of those demands have been met through the use of coal and gas. Therefore, my analysis of health effects associated with environmental pollution focus primarily on air pollution.

Air pollution is generally measured by the level of particulate matter in the air. Particulate matter is the amount of dust, soot, dirt smoke, or liquid droplets in the air that are suspended in the air for long periods of time (EPA). Particulate matter in the air is formed when gases from burning fuels react with sunlight and water vapor (EPA). Fuel combustion, power plants, and industrial processes are the main causes of particulate matter in the air. Air particulate matter is measured by the diameter of the particles in the air, which range from 2.5 micrometers to 10 micrometers. These small particles are inhaled from the air and can settle within the lungs, which can lead to dangerous health effects ranging from respiratory issues to cardiovascular disease.

Air pollution in China is becoming a growing concern due to the heavy use of coal. As previously stated, the burning of coal accounts for 70% of CO₂ emissions, 90% of sulfur dioxide emissions, and 67% of nitrogen oxide emissions in China (Grumbine). The chemicals that are emitted from the burning of fossil fuels cause air pollution. As the use of fossil fuels increase, the level of air pollution associated with it also increases. In 2003, over 50% of China's urban population was exposed to annual average PM level in excess of 100 ug/m³, which is twice the US standard. The increasing amount of particulate matter settling into the air has led to negative health effects.

Several studies have been conducted measuring the correlation between air pollution and health effects in China. Two popular studies include the study conducted by Maureen Cooper in 2010 and the study conducted by Aunan and Pan in 2004. In the article *What are the Human Affects of Air Pollution in China*, by Maureen Cooper, she measures the affect of air pollution through levels of morbidity attributable to air pollution. Cooper's findings show that a per 10 ug/m³ increase in additional PM 10 levels causes a 0.7 % increase in hospital admissions due to

cardiovascular disease, and a 1.2 % increase in hospital admissions because of respiratory diseases (Cooper). In the study produced by Aunan and Pan in 2004, entitled *Exposure Response Functions for Health Effects of Ambient Air Pollution*, they found that a per 10 ug/m³ increase in exposure to PM₁₀ can cause a 4.8% increase in chronic bronchitis. In 2003, 450,000 hospital admissions were associated with respiratory diseases, while 300,000 hospital admissions were associated with chronic bronchitis (Aunan and Pan).

These health effects were also modeled using levels of sulfur dioxide as a measure. The emission of sulfur dioxide is primarily caused by the use of coal in China, meaning that there is a direct causal relationship between energy use in China and health affects. According to the Aunan and Pan study, hospital admissions due to cardiovascular disease increased by 0.19% per 10 ug/m³ increase in the output of sulfur dioxide (Aunan and Pan).

Health affects range from cardiovascular and respiratory diseases to morbidity. In 2003, estimated deaths associated with outdoor air pollution exceeded 400,000 (Cooper). The cost benefit analysis of economic development and energy use should be looked into more seriously as the heavy use of fossil fuels come at heavy costs to society. Everyday, Chinese citizens are sacrificing their health due to out-door air pollution.

The health effects associated with outdoor air pollution are apparent yet the effects of air pollution are often times more severe for those of a lower socioeconomic status. While the level of poverty has gradually been reduced, the income gap within China has increased over time. Health affects associated with air pollution disproportionately affects those of poor socioeconomic status. With an income distribution that is growing increasingly more spread out, the health effects associated with poverty are becoming more apparent.

In 2008, Wong, Chun and King conducted a study to measure the effects of air pollution in regards to socioeconomic status in Hong Kong, China. Social deprivation was measured through the use of six variables; they included unemployment, monthly household income <\$250, no schooling at all, one person household, subtenancy, and never married status. The first four variables refer to educational

attainment and material wealth, and the never-married status is included due to the stigma associated with singles. The classification was done in 209 urban tertiary planning units within Hong Kong and the groups were separated between low middle or high in the Social Deprivation Index(SDI). The study showed that the number of deaths associated with sulfur dioxide air pollution was higher in high SDI areas as opposed as opposed to low SDI areas. The study also showed that cardiovascular disease associated with levels of nitrogen dioxide (NO₂) was more common for those with a high SDI index as opposed to a low SDI index. Another study produced by Niedell in 2004 measured the effects of carbon emissions and found that high exposure to carbon monoxide was found to have a larger effect on children from a lower socioeconomic background (Niedell).

The studies produced by Wong, Chun, and King and Niedell show that there is a strong correlation between socioeconomic status and health effects. There are several possible explanations for this effect. For example, those that have a lower income most likely have limited access to healthcare and poorer nutrition. Therefore, people of a lower socioeconomic status often times face higher risks associated with the negative impacts of air pollution.

Part III: Pollution Related Disputes and CCP reactions

As the economy has progressed, the levels of pollutants in the air have also increased leading to larger health concerns. Governments are generally responsible for the negative externalities associated with economic development, and when they fail to act responsibly this can lead to social unrest. In China, environmental disputes are becoming more and more common, as people are becoming more informed of the effects of environmental pollution. Since 1997, the number of pollution related disputes have increased annually by a rate of 25% (He). The levels of protests and conflicts related to pollution in the 21st century have also increased dramatically. Between 2001 and 2005, the annual numbers of pollution related disputes were 56,000, 71,000, 62,000, 51,000 and 12,800 respectively (He). Protests have increased steadily as citizens are gaining more knowledge of the negative effects of pollution and its relation to their environment. In response the CCP tries to adapt to the needs of the people, however, barriers involve the lack of political discourse and the intermingling between economic goals and environmental impact.

General awareness and knowledge of environmental impacts through personal experience, advocacy, and state media spurs citizens into action to combat issues related to environmental pollution. Disputes or drastic protests begin only when citizens feel that their personal well being and basic rights are being sacrificed. This was shown in the case study produced by Jun Jing entitled "Environmental Protests in Rural China". This case study involved 3,600 residents from Dachuan village and their efforts in combating water pollution in their community. In the early 1970s, the fertilizer factory that was built in the village produced waste-water which was dumped into the Yellow River. The stream leading to the Yellow River was the only source of water for the villagers and as the years passed, citizens started to notice the health effects associated with consuming polluted water. In 1970, three horses and 30 sheep went blind from drinking the water, yet the complaints to the factory yielded minimal results. Then in the 1980s, the water was so polluted with ammonia, that the crop yields were being damaged. At this point, the water pollution was becoming a direct threat to the economic well being of

many of the agricultural farmers in the area. The minimal cooperation shown by the factory led to protests in 1981 and after a day cadres gave in and started to supply a source of tap water in the central region of Dachuan. Then by the mid 1980s around the time of the One Child Policy, families started to notice birth defects, and this became a serious concern for every family and protests resumed with even more fervor. At each stage of protest, villagers learned the personal impacts that water pollution can have and after exhausting the proper channels of communication, villagers were left to protest.

Access to information and environmental awareness was also what instigated the closure of factories in Futian, in the Sichuan Province. In this case study produced by Tilt and Xiao, entitled “Industry Pollution and Environmental Enforcement”, environmental awareness came through the outlets of social media. In 2002, an expose called “Ten Minutes Tonight” focused on the local factories in Futian and the detrimental effects of pollutants from the factory. In this expose, a reporter with a hidden camera confronted the owner of the factory about the environmental hazards of his factory. In response, the owner simply boasted and said that despite its obvious pollution problems their industry constituted a vital source of tax revenue and therefore was immune to regulation. Within just a year the district government’s environmental protection group, Renhe District EPB was forced by national policy, citizen complaints and public scrutiny to shut down a large number of factories in Futian for noncompliance with emission standards (Tilt and Xiao).

Another key reason the number of environmental protests have been rising is because of the lack of political discourse between citizens and the government. In 1997 the number of letters sent to the People’s Republic over environmental abuse amounted to 100,000. By 2002 this number reached 400,000 and by 2006 it was close to 600,000 (Jing). Yet the majority of these petition letters calling for government action and representation were simply ignored. Of the many letters that were sent in, the court system handled no more than 1% of the country’s environmental lawsuits (Jing). When environmental lawsuits are rejected by the court system, this leads to petition drives, and when petition drives fail

demonstrations and protests follow(Jing). Citizens are lacking the proper outlets to express their concerns and when their efforts are continually dismissed, citizens have no other choice but to protest.

The main source of political discourse between the government and its people is the petition system. Also called *xinfang* this system was suppose to encourage political stability by creating a means of communication. However, those that petition often face repercussions, and are often held responsible if they lead to disruption actions. Under the 1994 Beijing Petition Regulations, petitioners have clear regulations they must abide by (Storey). For example “Petitioners will be investigated for criminal responsibility if they engage in disruptive action, damage property and threaten staff among other activities; they will also be subject to prosecution if they are deliberately provocative and incorrigible”(Storey). Yet despite regulations, the number of petitions sent to the central government is continually growing, while the government response is limited. For the most part these petitions are ignored. The lack of discourse and the minimal means of addressing concerns lead to disruptive actions. The number of disruptive action in China grew from 8,700 in 1993 to 87,000 in 2005 (Storey). Many citizens are losing their confidence in the structure of the petition system as a means of discourse and are becoming more active in protests in order to satisfy their demands.

The Chinese government responds to the demands of environmental protection in different manners due to sometimes-divergent goals between the central government, district government, and township government. The central government sets more expansive policies and tries to abide by international ideas around sustainability. The central government has increased its efforts around environmental sustainability by creating more regulatory agencies, increasing regulatory standards through policy initiatives and providing increased funding toward environmental protection projects. For example, the State Environmental Protection Agency (SEPA) since its start in the 1970s has gradually grown from 88,000 employees in 1995 to over 380,00 employees in 2006 (Tilt and Xiao). The level of funding towards environmental protection efforts has also grown significantly. Government statistics report that investment in pollution control and

treatment grew from 8.2 billion yuan in 1999 to 16.3 billion yuan in 2003 (Tilt and Xiao). Now expenditures on environmental protection make up about 1.4% of GDP (Tilt and Xiao). Both through policy and funding the central government has committed to improving environmental conditions. The support for the necessary policy initiatives is in place and the policy goals for sustainable growth is admirable, however, policy goals are often times not met due to lack of enforcement.

Despite the broad mandates by the central government, the reality is that the priorities, projects, and implementation of environment regulations are actually the responsibility of the district and local governments. The priorities of the different levels of government do not usually align. This was the case for the study done in Futian. As noted earlier factories in this particular village were shut down due to the attention brought on by the media.

The factory owner stated he had no regard for environmental regulations since his industry essentially supports the economy of the village. When the factories were forced to shut down in 2002, the black and white nature between economic development and environmental sustainability became apparent. After the shut down the fiscal situation in the township plummeted. Industrial taxes declined from more than 2 million yuan in the late 1990s to zero following the factory closures (Tilt and Xiao). Prior to the factory closing, the majority of the taxes were spent on development projects in the village, including investment in infrastructure, healthcare, and schooling. After the factory closures the operating budget for development projects were cut by two thirds. Businesses within the village also suffered heavy economic losses. Half of the retail stores that originally catered to the factory workers and their families were forced to close. In this case the level of environmental enforcement was detrimental for the community. This case study showed that on a local level, officials are often less likely to take on environmental protection measures very seriously as taxes often make up a large portion of local government revenue.

The district government generally plays the middle ground in balancing the priorities of the central and local governments. In the Futian case the district government sided with the central government by strictly enforcing the emission

standards already in place. The Futian case was more sensitive due to the public scrutiny caused by the expose, but on a general note the district government is suppose to encourage sustainable development by balancing the goals of both the central government and the local government. This can be a hard task considering the different priorities of each group.

Overall, there has been increased commotion on the subject of environmental protection because citizens are gaining a greater understanding of their health and well-being in relation to the environment. Environmental awareness has led to greater demands for government action, however the channels for communication and political discourse are often times ineffective. In order to avoid political instability there needs to be an improved outlet for political discourse and discussion. Also, the different levels of government need to also cooperate in order to consolidate often times divergent goals in order to promote sustainable development.

Part IV: Adaptation Model Analysis

The adaptation model would assume that the survival of the Communist Party is dependent on their ability to adapt and respond to challenges. In my analysis I look into how the CCP is able to do this through meeting the challenges of sustainable development.

As the Chinese economy started to grow, many environmental conditions were over-looked because economic growth was a generally prioritized over environmental pollution. The building of factories within villages was considered a sign of growth and industrialization, and many local governments encouraged these investments. However, the last two decades have shown the negative externalities of pollution that are often times accompanied with increased industrial output. Environmental awareness has caused a growing number of environmental-related disputes and protests. The manner in which the CCP reacts to the above challenges is key in measuring the party's continued success.

The central government, in its efforts to quell social unrest in regards to environmental pollution, has put into place a wide range of policies and initiatives to encourage and incentivize environmental protection. In 1995, the CCP refused to spend even half of the recommended 1.5% of its GNP towards environmental protection (Vemeer). But by 2003, the CCP close to doubled its effort by spending 16.3 billion yuan or 1.4% of its GNP towards environmental sustainability (Tilt and Xiao). As the CCP is realizing the hazards related to environmental pollution and the challenges related to them, the central government is stepping up and responding to the needs of its people. Along with financial support, the central government has also been active in creating more stringent environmental policies and have shown growing efforts in regulating those policies. SEPA, the bureaucracy focused primarily on advocating for environmental protection and regulation has also grown significantly in size. These efforts are a positive sign of the central government gradually adapting to some of the environmental demands of its citizens.

On a local and district level the goals and priorities are different. The government structure in China generally allows for more autonomy and

independent discretion on the local level, therefore local cadres are more prone to corruption. This is essentially what causes the weak and uneven enforcement of environmental laws. In both the Futian and Dachuan disputes, local government failed to respond properly to the demands of the community. In the Futian case, the issue of environmental pollution could have been addressed prior to the expose had environmental regulations been properly enforced earlier. After the media exposure, citizens and higher government officials vehemently advocated for the closure of the factories. If the local government had ordered a gradual phase-out of emissions prior to the expose, this could have saved the village from economic collapse.

The failure of local government is also shown in the Dachuan case. In the Dachuan disputes, villagers had asked their local government for advice regarding the issue of water pollution. However, the local government instead of cooperating with the citizens to find a proper compromise; they simply dismissed the issue. The local government, which is suppose to advocate for the needs of its citizens failed in its role. When citizens came to protest it was apparent that cadres sided more with the factory owners because they themselves were receiving a portion of the profits. During one of the major protests, citizens called out the Communist Party Secretary General Manager to drink the polluted water that the rest of the village was forced to use. It took close to 20 years of constant protest for the factory to address the issue of water pollution. These frustrations could have been alleviated with less tension had the local government been more prominent in its role of environmental regulation.

One of the failures of the guerilla style of policy making is that political accountability is sacrificed by the leadership flexibility (Heilman and Perry). Also since many institutions remain unchecked by either the media or other bureaucracies, they become more prone to corruption. Corruption was obvious in both cases regarding Futian and Dachuan. Since the local EPA wasn't active, and the local government sided with the factory owners, citizens did not receive proper representation and the political discourse that was necessary in communicating the priorities of the people were ineffective. Also the independence and autonomy that was given to local cadres was unchecked, and without political transparency local

cadres were able to get away with providing lax environmental regulations to the industries of their choosing. Public attitudes also reflected the failure of local government. In 2009, Tony Saich's created a study using data from the Horizon Market Research Company (3,000-4,000 respondents) analyzing approval ratings for different branches of the government. In his analysis, Saich found that 95.9 % of residents were satisfied with the CCP, 80% of residents were satisfied with midlevel government, and only 60% of residents were satisfied with the local government. In order to improve public sentiments, local government needs to play a larger role in addressing the concerns of its citizens.

Although the CCP is adapting by encouraging environmental sustainability on many fronts, the CCP also needs to consider "adapting" to a more transparent and representative political structure so that the needs of local residents are met. Overall, there is still a strong amount of confidence and pride in the Communist party. With approval ratings of 95%, the central government still retains a strong amount of support (Saich). And despite, the growing number of protests there is still a strong sense of legitimacy towards the central government.

Conclusion:

The past 30 years of economic development has caused forms of social unrest, however the Chinese Communist Party has responded effectively to many of the needs of its people. The central government in the past five years has implemented more environmental regulations and created more funding towards environmental initiatives. This process is an ongoing one, but the CCP has started to step up in its efforts. Now China is moving towards more sustainable development in order to balance economic growth, environmental concerns, and social harmony. The central government is essentially adapting to the country's environmental concerns. Moving forward China is likely to adapt through processes of gradual change.

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