

# Environmental Conservation

There is growing concern in the United States over various issues related, and as such solvable- to/through public policy. This paper will emphasize on one of these public policy concerns – environmental conservation. Concern over the environment is receiving increased attention with time, and with it has come greater media attention and coverage. A review of the literature reveals the gravity and stress on the subject. For instance, Sussman (2005) explains that the talk on environmental conservation can be traced back over half a century ago, with President Kennedy being one of the proponents of the significance of environmental conservation in the 1960s through his speeches. According to Sussman (2005), President John F. Kennedy emphasizes the need for the maintenance of the environment amid rapid industrialization characterized by the exploitation of natural resources. Two conflicting schools of thoughts were in existence, with the firsts encouraged by the Dominant Social Paradigm which supported the premise that natural resources could still be exploited without damaging the environment, while the New Environmental Paradigm disagreed with this notion and instead supported the need for added emphasis on environmental protection, and the creation of viable avenues for mitigating the deletion of natural resources.

## Introduction

As Sussman (2005) explains, the environment was thus embraced as a legitimate policy issues during the “1970s and 1960s”, a factor that received enough political and public attention. However, the issues of environmental conservation didn’t receive equal political attention in the different political administrations. For instance, some presidents have been pro conservation, while others have been avid supporters of development, which is associated with limited restrictions and regulations on industry and businesses (Sussman, 2005). It is important to note that these divisions [propelled by bipartisanship have created a wedge between political groups over environmental issues and initiatives. The environment movement has been fuelled by various stakeholders, including property rights groups and American citizens that advocate for economic policies made by local and state governments as opposed to the federal governments, and the demand for clean water and air respectively (Sussman, 2005). Despite the increasing debate, environmental conservation has played second fiddle to other policy issues such as the economy, creation of employment, defense, and other policy issues.

Sussman (2005) explains that environmental policy in the United States has been influenced by the federal government as well, especially with increasing involvement of the federal government, which represents a change from the local and state governments – since Nixon’s administration. However, despite this attention from the federal government, states officials maintain that the federal government is falling short of its mandate, which has resulted to more states creating new policies to address environmental problems, such as has been the case with global warming. Great milestones have been achieved in environmental issues, such as the National Environmental Policy Act which increased federal government’s involvement in environmental policy in the late 1960s, the creation of the Environmental Protection Agency in the early 1970s, along with a series of environmental legislations such as the Clean Air Act and the Clean Water Act in the 1970s (Sussman, 2005). But have these developments been sufficient? This is addressed below.

According to Lofstedt and Vogel (2001), the United States regulatory policies have been more salient and less strict as compared to those of Europe, which has experienced considerable regulatory policy changes over the last four decades. Furthermore, while the environment has improved significantly since the 1970s, especially with regards to clean air and water, environmentalists have directed attention towards international environmental issues such as global warming, deforestation and the unsustainable growth in population (policyalmanac.org, n.d). But this doesn’t mean that all is well in the United States. According to Daniels et al. (2012), over the last few decades, news media coverage has resulted to a great deal of influence in Americans perception of environmental issues, which may be sufficient to garner up political attention and possibly legislations. Daniels et al. (2012) explains that majority of Americans are concerned about the environment, in related issues such as pollution of water ways and air pollution. Modern times are very much alive to the significance of environmental conservation. According to Gardiner (2014), the issue of global warming is taking on the headlines on a global scale, with measures of containment sought through the education system. Some of the worst environmental disasters publicized by the media include the BP oil spill that occurred over the Gulf of Mexico four years ago, but debate over this incident is still ripe in the United States administration with studies aimed at investigating the effects of the oil spill on underwater life. The oil spill has already spent do much money as a result of the oils pill, with penalties amounting to a maximum of eighteen billion dollars (Gardiner, 2014). With the effects of the oil spill attracting this much media coverage, Guessoum (2014), identifies yet another environmental concern- climate change, especially with the alarming increase of carbon dioxide gas in the globe. According to Guessoum (2014), scientists have been unable to influence policy makers in coming to terms with the radical changes in the local as well as regional acclimates.

## Who are the stakeholders and affected constituencies?

The main stakeholders are the government, environmental protection agencies, businesses and the American citizens. The government is an important stakeholder since it has the power to effect legislation that is pro-environmental, which would result in improved public opinion and limited media criticism of the administration. Environmental protection agencies are also key stakeholders since they serve the goal of responding to various environmental issues anywhere around the world. Businesses are also key stakeholders since they benefit from the natural resources made available in the natural environments, and as such environmental maintenance would mean greater sustainability. The American people as well as the global population are also main stakeholders since they derive their livelihood-including but not limited to fresh air, water, and food resources, from the environment, and thus fall within the category of key stakeholders. In a study on environmental management practices, Delmas and Toffel (2004) explain that the main stakeholders include the community, regulators, environmental interest groups, customers, the governments, and industry associations. The rationale behind the identification of stakeholders is to identify groups and individuals who are capable of wielding sufficient pressure on firms, and other bodies towards environmentally friendly practices. According to Reed (2008), the dynamic nature of environmental issues and problems warrant a flexible yet open decision making platform that embraces diversity of various pieces of knowledge and information, and as a result of this, stakeholder participation has decisions pertaining to the environment has been sought increasingly, and embedded in national as well as international environmental policies.

### **How much does the public policy issue cost Americans? How much would it cost to address the issue? If the costs are unknown, why are they unknown?**

It is very difficult to accurately quantify the costs of environmental problems. This is because environmental issues are diverse, ranging from climate change, industrial pollution, and other environmentally damaging activities. This paper will mainly be focused on one element of environmental issues undermining environmental conservation in the United States- fracking. Given the scope of environmental problems in the United States and around the globe, it would be extremely difficult to develop an economic policy that addresses all the issues at the same time, or to quantify the economic effects of all environmentally degrading problems. For instance, the economic costs and solutions of agricultural waste production cannot be compared to the costs and possible solutions for fracking, or the rise in fluoride in water ways as a result of industrial activities.

According to Benusic (2013), fracking has become a public health concern, especially due to the unknown health effects and the increased rate of water contamination and exposure to dangerous chemicals. There has been over seven thousand wells drilled since the year 2005, but to date, the process has been prohibited in areas such as Quebec, Delaware and New York (Benusic, 2013). The main concerns of fracking include the increase cases of drinking water contamination especially with chemicals such as methane.

According to Dutzik et al. (2013), fracking is also linked to the deterioration of the health of residents living in close proximity to the fracking sites, the destruction of forests, and also to global warming. These issues are related to huge costs to the American population. According to Dutzik et al. (2013), the costs of hydraulic fracking are usually borne by the public as opposed to the perpetrators of the damage. These costs are as follows.

Fracking results to the contamination of water supplies through spillage, and the release of chemicals and waste water to water ways (Dutzik et al., 2013). Dutzik et al (2013) explain that limitations in the constructions of wells facilitate the entry of methane and other chemicals to drinking water, with these cases involving over four hundred cases in New Mexico in which waste materials from fracking leaked into ground water, over three hundred and forty instances of leaks and spills in Colorado, one hundred and sixty one cases of drilling operations impacting water wells in Pennsylvania, to name but a few case. The costs of remediating ground water contamination is very high, ranging to hundreds of thousands of dollars to the responsible company, but also to the residents who have to seek expensive machinery to replace their water sources (Dutzik et al., 2013). According to Dutzik et al. (2013), the state of Colorado experienced water contamination since the year 2004, and the process of removal of these pollutants extended till the year 2012, with the responsible company paying hundreds of dollars for this removal, and a further three hundred and fifty thousand dollars for water replacement for the residents which extended till 200. Dutzik et al. (2013) explains that the occurrence of many fracking oils in a small area may also result ton increased flow of waste materials into the waterways, which translates to higher water treatment costs. According to Dutzik et al (2013), the State of New York is particularly at a risk of about six billion dollars for the construction of a water filtration plant if its water supply was to be compromised by fracking activities.

Additionally, the costs of fracking result to diseases such as cancer, disruption of the endocrine system, as well as brain and immune system issues (Dutzik et al., 2013). As Dutzik et al (2013) explain the health impacts of fracking attract huge economic costs, such as the public health cost of over ten million dollars in Arkansas, “2008”. The health dangers not only affect the nearby residents, but also workers on those sites (Dutzik et al., 2013). Fracking has also been linked to the damage of natural resources, such as the transformation of rural areas to industrial zones fitted with roads and pipelines, which undermines the true value of these areas, alongside the landscape integrity and aesthetics (Dutzik et al., 2013). The contamination of waterways as well as the huge water usage related to fracking can be

linked to destruction of marine life, such as the death of fish and a destruction of fishing industries in these areas – such as Pennsylvania (Dutzik et al., 2013). In Wyoming, fracking has resulted to the reduction of deer population, resulting in a loss of more than eleven million dollars since the start of fracking in the region (Dutzik et al., 2013). Fracking has also been linked to damage of roads, what with the necessity of huge trucks, with towns such as Pennsylvania recording an estimated repair cost of roads of two hundred and sixty five million dollars (Dutzik et al., 2013). In the State of Texas, the associated demand for water for fracking activities is estimated to peak at 40 percent by 2020, which warrants infrastructural changes such as the water plan valued at fifty three billion for a water system (Dutzik et al., 2013).

According to Miroff (2014), the Eagle Ford shale formation is one of the signs of the extensive drilling in Texas, with over five thousand and four hundred wells drilled in Texas, and law makers have proposed a law to allow the United States and other companies to invest into fracking in Mexico, where the volumes of shale resources are believed to be enormous. However, most of decisions regulating shale gas extraction through hydraulic fracking are political, as opposed to economical as explained by Miroff (2014). The political aspect of the proliferation of fracking is exploited by the Huff Post (2014), which points out to the recent climate caucus, where some of the most important concerns to climate change, and the environment were discussed, with the most dominant identified as the export of liquefied natural gas. The Huff Post (2014) explains that Senator Mark Udall and Congressman Cory Gardner were successful in pushing for the success of their legislation, which will remove the barriers to the export of liquefied natural gas, and by so doing increase the occurrence of fracking. Once again, this shows the counter productivity facilitated by political powers.

As the Huff Post (2014) explains, the oil and gas industry has advocated for the export of gas, since the Ukraine crisis erupted, a factor that has been exacerbated by Congress. As such, this issue is affecting both the state as well as the federal governments. An article in RT (2014) explains that states are coming together to address the issues related to fracking, especially with the increasing incidents of earthquakes. Regulators from the United States convened to discuss this issue (RT, 2014). The involved states include the states of Ohio, Oklahoma, Texas, and Ohio which are seeking collaboration and the identification of means to strengthen fracking standards through greater monitoring procedures (RT, 2014). Some of the political institutions that will be influential in such moves include the Interstate Oil and Gas Commission which is representative of the energy states, as well as the federal government through Congress (RT, 2014). Additionally, the House Committee on Energy and Commerce is a crucial political institution to involve in this discussion. Ergo, the issue of fracking can be sorted out through increased mentoring and rising of standards, through regulation. What is the cost of addressing this fracking issue?

In a proposal in front of the House committee on Energy and Commerce, and the Subcommittee on Energy and the Economy, Soni (2013) explain that regulation would only cost approximately one hundred thousand, and five hundred dollars for each new well drilled, and centrally to common belief that regulation would lead to increased costs, the Environmental Protection Agency would need to impose regulations on states and industries that are already in compliance. According to Soni (2013), despite these perceived increases in costs, federal regulation is of essence especially because some of the most affected states are unable to fully enforce the appropriate laws. Soni (2013) further explains that the Department of Energy further showed that federal regulation would only increase the costs for states which have not adequately protected their water sources and public health to prevent groundwater from contamination, which is worth the extra cost. This regulations would also necessitate the full disclosure of the proportions of substances used in the fracking fluid to facilitate public safety, but would not have to publicly publicize their formula's which would put them at a risk from competitors (Soni, 2013).

Juxtaposing the costs of regulation to the costs of fracking, it is arguable that the costs of the latter far outweigh those of the former, which substantiates the need for regulation to mitigate the harmful effects of fracking. In further support of the need for regulation and full disclosure, Soni (2013) presents the case of a doctor in Colorado who in treating a worker on whom fracking fluid had spilled on his clothes, she lost her sense of smell within twenty four hours, followed by organ failure, a situation which was further exacerbated by the reluctance of the responsible company to disclose its ingredients which greatly undermined doctors efforts to treat the doctor. This shows that concealment of the ingredients by companies is an issue that warrants address, in order to prevent exposure and contamination of persons in contact with the fluid. In addition to enforcing regulations, the government also needs to recruit more inspectors to eliminate the risks posed by inadequate inspectors on the efficiency of passed regulations. According to Soni (2013), while the state governments possess the authority to pass such regulations, there are subject to the inability to enforce these laws especially since there are fewer inspectors and too many wells, which often leaves many wells uninspected for long periods of time. Take for instance the existence of only seventeen inspectors in the State of Virginia with over five thousand wells in the state. Still, the cost of hiring more inspectors' pales in comparison to the colossal cost of building new water systems, and eliminating pollutants in the water supply as previously discussed in this paper.

**Discuss at least three proposed policies to address this issue.**

One of the most publicized environmental policies to address fracking is the encouragement for companies to disclose the chemical substances that form their fracking fluids (Cooley & Donnelly, 2012). Several milestones have been achieved in chemical disclosure. These include efforts by the “Ground Water Protection Council and the Interstate Oil and Gas Compact Commission” in developing a website that allows for voluntary content disclosures of fracking fluid by oil and gas companies (Cooley & Donnelly, 2012). Several states have improved their regulation to require disclosure of specific information to the public such as material safety data sheets, while some states have implemented regulations requiring companies to disclose through FracFocus.org (Cooley & Donnelly, 2012). There is however a need for full disclosure of all chemical substances in the fracking fluid as proposed by Soni (2013), in order to hold companies accountable, and also in order to facilitate the treatment of affected individual sand areas. Dutzik et al. (2013), identify the second proposed policy, - financial assurance. According to Dutzik et al. (2013), fracking poses too many threats to the health and environment, and if the activities of oil and gas industries must continue, there should be the need for up front financial assurance which is commensurate to the level of damage. This proposed policy is to hold the oil and gas companies accountable, by requiring financial assurance for the risky activities of the industry. This makes it possible for the public to be protected and assured once fracking related damage occurs, and prevents the guilty operators from leaving the scene unscathed (Dutzik et al., 2013). It provides a guarantee for the environment to have available funds for its fixing should anything occur, which would facilitate greater accountability and responsibility from the drilling companies (Dutzik et al., 2013). Thirdly, there is need to eliminate the exemptions and loopholes present in environmental laws and regulations in order to forge greater accountability and limit the risks of fracking (Dutzik et al., 2013). According to Dutzik et al. (2013), the federal government should eliminate the exemptions of oil and gas companies from major employment laws. Features such as blanket bonding which allows for discounts on financial assurance should be eliminated (Dutzik et al., 2013). This opinion is shared by Lofstedt and Vogel (2013), who appreciate the need for the elimination of loopholes and unnecessary barriers to improve regulatory efficiency. Recommend a solution to the policy concern from those proposed. Be sure to address the following in your recommendation

Of the above mentioned policies, the first one is the most apt, since full disclosure will improve accountability, and facilitate the regulation of materials used by fracking companies. This will not only reduce the likelihood of environmental degradation accruing from fracking, but will also lead to mitigation of the health risks associated with fracking. As Armitage, Loe, and Plummer (2012) suggest, accountability and legitimacy in environmental issues are a factor of legislation and regulation. Furthermore, Armitage, Loe, and Plummer (2012) explain that environmental governance is of essence in solving environmental issues. That said, both environmental governance and regulatory mechanism as explained by Armitage, Loe, and Plummer (2012) would facilitate the administration of this policy.

### **Administrative feasibility**

According to Cheng et al. (2014), the authors hold the premise that proper documentation and reporting systems for waste water management is necessary at both the federal and state level, coupled with underground injection controls to determine the use of diesel as a fracturing fluid or not. This falls in line with the disclosure of the materials used for the fracking process, since without proper disclosure and transparency in the nature of chemicals used in fracking, none of this can be achieved. In order to implement mandatory disclosures, the federal government needs to enforce laws that mandate hydraulic fracturing companies to disclose the concentration and composition of the fracturing fluid to both federal and state regulatory agencies, along with health care professionals (Cheng et al., 2014). As already noted above, various institutions have created avenues for voluntary disclosures such as through the FracFocus.org. Thus, this policy can make use of this existing mechanism and structures to enforce mandatory disclosures, which will facilitate and ease the implementation process.

### **Advantages**

There are various advantages to this approach. Firstly, as Cheng et al. (2014), explain, there are currently no federal disclosure standards in existence which make it mandatory for fracking companies to list their toxic chemicals. This would facilitate the identification of these chemicals, and also the regulation of the materials that can alternatively be used and with less adverse effects. As Cheng et al. (2014) point out, only fifteen states have enacted disclosure laws out of twenty nine states which have hydraulic fracturing activities, and of these fifteen states, nine are exempted from disclosure of chemicals that are considered as trade secrets, with only one state having the mechanisms to evaluate these so called trade secrets with factual justification warranted. Ergo, this policy would serve to remove such loopholes and facilitate standardization and improvements of fracking standards (Cheng et al., 2014). Thirdly, this would pave way for future research aimed at building on the comprehension of the impacts of hydraulic fracturing on human health, as well as the environment (Cheng et al., 2014). This will facilitate the assessment of the health and environmental impacts (Cheng et al., 2014).

### **Disadvantages**

Despite the apparent advantages of this proposed policy, companies which indeed have trade secrets may become at an increased risk of disclosure of this information, which may make it susceptible to competitors. In as much as the process of analyzing the validity of the chemicals as trade secrets can be private and secure, once information is out, it becomes easier to leak. Furthermore, the disclosed information may not be genuine or transparent, and in most cases, inaccessible to the public (McFeeley, 2012). As McFeeley (2012) argues, in most states where full disclosures have been implemented, there are many barriers to access of this information such as difficult to navigate websites. Additionally, this policy is subject to compliance and enforcement, and as has been the case in the past in states where disclosure requirements exist, compliance has been inconsistent, and enforcement has been uneven. Eliminating these inefficiencies may prove to be a daunting task, and the lack of the same would undermine the effectiveness of the policy/.

## Conclusion

The United States is currently the largest supplier of natural gas in the world. This gas is achieved through hydraulic fracturing whose impacts on both human health and the environments have been the subject of a heated debate over the last decade, and even today. While it is massively improbable to expect the abolition of the fracturing process, it is essential to instill relevant regulation through adequate and suitable policies, in order to mitigate these risks posed to the environment. With the alarm raised by global warming, it is imperative for these regulations to be timely and effective. This paper has identified one of the most hotly debated topic relating to environmental conservation, and with the proposed policy, there is confidence in mitigating and regulatory interventions to facilitate environmental sustainability.

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