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> *This is a matter of life and death. The science is clear. Carbon concentrations higher than 350 parts per million, and temperature rises above 1.5 degrees, will submerge my country, dissolve our coral reefs, turn our oceans to acid, and destabilize the planet's climate.*
>
> Mohamed Nasheed, President of the Maldives
> Address at the COP 15 in Copenhagen, December 17, 2009[1]

I. INTRODUCTION

The significant effects of climate change, particularly rising sea levels, are making the lives of some of the world's most vulnerable populations extremely difficult. In 2009, inhabitants of the Carteret Islands, Papua New Guinea, gained international headlines for becoming some of the first "climate change refugees."[2] The small, picturesque island was inundated with water during the annual king tide season.[3] Inhabitants were forced to stash their possessions in fishing nets and string them up between palm trees.[4] Many inhabitants of the small islands have agreed to relocate, and the head of the relocation plan is trying to raise $1.5 million to fund the migration of 750 people before the annual king tides return in 2010.[5]

Developed nations are feeling the effects of climate change as well. In 2008, Kivalina, Alaska, an Inupiat Eskimo village, filed state and federal nuisance claims in the Federal District Court for the Northern District of California against various oil companies and electric utilities that have directly emitted large quantities of greenhouse gases for many years.[6] The complaint provides that

> [g]lobal warming is destroying Kivalina through the melting of Arctic sea ice that formerly protected the village from winter

> storms. The result of the increased storm damage is a massive erosion problem. Houses and buildings are in imminent danger of falling into the sea as the village is battered by storms and its ground crumbles from underneath it. Critical infrastructure is imminently threatened with permanent destruction. If the entire village is not relocated soon, the village will be destroyed.[7]

Kivalina is seeking the estimated $95 million to $400 million necessary to relocate the entire island village to mainland Alaska.[8] The case was dismissed by the district court[9] and is currently on appeal in the Ninth Circuit Court of Appeals.[10]

It is true that some areas of the world are enjoying the benefits associated with a modest increase in temperatures. For example, higher latitude areas, such as regions in Canada, Russia, and Scandinavia, are benefitting from rising temperatures through higher agricultural yields, lower winter mortality, lower heating requirements, and a potential boost in tourism.[11] However, the effects of climate change are estimated to far outweigh the minimal benefits enjoyed by these few areas of the world. The cost of extreme weather events alone is estimated to lower global gross domestic product (GDP) by 0.5–1 percent by midcentury, and a raise in global temperatures of 5°C–6°C could result in a decrease in global GDP of 5–10 percent, with developing nations suffering a decrease in GDP of over 10 percent.[12] In addition to more extreme weather, estimates are that sea levels could rise as much as two meters within the century.[13] This slow and destructive rise in sea levels has been described as a global Hurricane Katrina in slow motion[14] and could prove disastrous for small island nations, some of which rise no more than two meters from the sea.

The Carteret Islands and Kivalina village climate-change-forced relocations are just two examples of what might occur in island nations throughout the world. The problems associated with relocation will be magnified as larger islands and entire nations are forced to leave their homes in search of dry, habitable land. These Small Island Developing States (SIDS) are extremely vulnerable to climate change. Because many

SIDS rise no more than a few meters above sea level and are isolated in the world's oceans, their human and ecological adaptive capacity is very low.[15] With the continued sea level rise rendering their island homes uninhabitable, some SIDS will be required to abandon their homelands and relocate their entire populations.

While the international community has recognized the unique and severe risks climate change poses to SIDS, international law has failed to adequately address the issue. Although climate change mitigation efforts are underway, many SIDS are faced with such imminent and severe problems (i.e., the surrender of their homeland to rising seas) that mitigation will not solve the problem. Because of the developed world's significant contribution to climate change, an international climate change adaptation regime supported by the developed world must be implemented to help SIDS adapt to climate change.

First, I will briefly present the science of climate change and its unique threat to SIDS. Second, I will discuss politics of climate change, focusing on the world community's failure to adequately address the problem and SIDS' attempts to force action. Third, I will provide methods in which the world community can assist SIDS in dealing with imminent threats posed by climate change. In this third section, I will briefly discuss the inadequacy of mitigation measures for dealing with the climate change problems facing SIDS. I will then present and compare two adaptation strategies and their implementation, focusing on the difficult legal and political issues they raise.

The first adaptation strategy I will discuss is a global immigration strategy under which an entire population of a particular SIDS would immigrate to other countries. The second adaptation strategy, supported by the President of the Maldives, is to purchase land from another country in order to completely relocate a country.[16] Under this second strategy, a SIDS would remain a sovereign nation, just in another location. Both options pose significant legal and political problems, some of which have never been

addressed before; however, the lack of action by the world community has forced SIDS to seriously consider utilizing these drastic and complex adaptation measures.

II. CLIMATE CHANGE AND ITS UNIQUE THREAT TO SIDS

In order to gain a better understanding of the unique and dire situation faced by many SIDS, one must understand the geographic situation of SIDS and the climate predictions. There are currently fifty-two SIDS[17] located across the Indian, Pacific, and Atlantic Oceans, as well as the Caribbean Sea.[18] Most SIDS are extremely poor, very susceptible to natural disasters, and significantly influenced by ocean-atmosphere reactions that manifest themselves in extreme weather events such as hurricanes and cyclones.[19] Twelve SIDS have "Least Developed Country Status,"[20] which means they are characterized by "[e]xtreme poverty, the structural weakness of their economies and the lack of capacities related to growth, often compounded by structural handicaps."[21] Despite SIDS' geographical and cultural diversity, they share many characteristics and similar economic and sustainable development challenges: small but rapidly growing populations, remoteness, susceptibility to natural disasters, excessive dependence on international trade, and vulnerability to global development.[22] These characteristics make SIDS extremely vulnerable to climate change, and those with the lowest elevations will likely be its first nation-victims.

Additional characteristics make SIDS extremely vulnerable to climate change. Many SIDS rise no more than three to four meters above sea level. Most SIDS have very limited water resources and arable land,[23] which means that rising sea levels will lead to saltwater intrusion into the limited freshwater resources and soil salinization of the few arable lands.[24] Saltwater intrusion will contaminate water used for drinking and agriculture. Soil salinization is a significant threat to domestic food productions and cash crop exports.[25] Sea level rise will also cause enhanced coastal erosion, loss of property, and dislocation of people. The projected

rise in sea level will also be accompanied by changes in precipitation patterns, more intense storms, pressure on biodiversity, and coral destruction due to bleaching and ocean acidification.[26] Finally, many SIDS economies rely heavily on tourism, which climate change will greatly affect.[27]

Understanding the already precarious geographical position of many SIDS, it is clear that the effects of climate change on SIDS will be dire. While some argue that climate change is not real or is overstated, the overwhelming scientific consensus is that anthropogenic (man-made) climate change is occurring.[28] Furthermore, it is widely recognized that if climate change is not addressed aggressively, it will force the world to spend an exorbitant amount of money to adapt to a very different and less-stable climate.[29]

One study on climate change that policy makers worldwide have utilized is the Intergovernmental Panel on Climate Change's (IPCC) Fourth Assessment Report.[30] In the report, the IPCC estimated various Surface Air Temperature (SAT) increase scenarios and the sea level rise that each scenario would cause by 2100. These scenarios are based on computer models using different emissions scenarios ranging from nonmitigation to idealized mitigation scenarios.[31] (Mitigation is a term used to describe efforts to decrease greenhouse gas (GHG)[32] emissions.) The six SAT scenarios range from a 1.1°C to a 6.4°C increase in global temperatures.[33] These increases would create a corresponding sea level rise of 0.18–0.59 meters.[34] Furthermore, the IPCC estimated with medium confidence (50 percent chance[35]) that within centuries to millennia there will be at least partial deglaciation of the Greenland ice sheet and possibly the West Antarctic ice sheet.[36] This would cause a sea level rise of four to six meters or more.[37] The complete melting of the both Greenland and West Antarctic ice sheets would lead to a sea level rise of twelve meters.[38]

According to the IPCC, climate change impacts will be mixed across regions.[39] For example, a few northern latitude areas will experience net

benefits with an increase in temperature of less than 1°C–3°C.[40] However, for other areas of the world, including most SIDS, climate change, even at a small temperature increase, will have drastic effects on the weather and environment, effectively making it more difficult, if not impossible, for people to live in their surroundings.[41] It is very likely that all regions of the world will experience either declines in net benefits or increases in net costs at an increase in temperature of over 2°C–3°C.[42]

This phenomenon of differentiated effects is significant for the future of SIDS. While some of the poorest countries in the world, like SIDS, are attempting to cope with the most severe effects of climate change, most developed countries, like the United States, are encountering minimal effects.[43] This creates a situation in which developing nations that are least politically and financially capable of addressing climate change attempt to force action on the international stage. At the same time, many nations that are in the best position to comprehensively address climate change, like the United States, are unwilling to take action because they are not currently faced with immediate and present discernable threats.[44] In short, differentiated effects are making it difficult for SIDS, or any other nation, to begin to meaningfully address the effects of climate change.

While the prognosis for many vulnerable SIDS was already bleak under the IPCC's Fourth Assessment Report, many believe that the IPCC drastically underestimated projected sea level rise. A United States Geologic Survey study of published scientific literature and models based on new information concluded that sea level rise will likely (65 percent[45]) substantially exceed 2007 IPCC projections.[46] Similarly, Katherine Richardson, the head of the Danish government's Commission on Climate Change Policy, said the 2007's IPCC Fourth Assessment Report is outdated.[47]

Many new estimates of projected sea level rise are much higher than the IPCC estimates. Professor Konrad Steffan from the University of Colorado predicts a one-meter increase by 2100 because of increased ice loss in

Greenland.[48] This prediction is three times the average predicted by the IPCC.[49] Echoing this prediction, Professor Eric Rignot, a senior NASA scientist, said that new studies show that Greenland and Antarctica are contributing more and faster to sea level rise than anticipated.[50] Some predict an increase in sea level of more than one meter by 2100. For example, Professor Stefan Ramstorf of the Potsdam Institute for Climate Impact Research estimates an increase in sea level by 2100 of nearly two meters.[51] Similarly, a 2009 study in *Science* indicates that the IPCC did not take into account certain feedback loops, and sea levels could rise two meters by 2100.[52]

While all SIDS are very vulnerable to climate change, especially if the new predictions are correct, some SIDS are extremely vulnerable and will feel the effects sooner than other SIDS. The small island nation of Tuvalu is the perfect example of an extremely vulnerable SIDS. Tuvalu is a nation of just over twelve thousand people located in the South Pacific Ocean and is just one-tenth the size of Washington, D.C.[53] Tuvalu is an extremely poor nation, grossing under $15 million per year. (Globally, Tuvalu ranks 224 out of 226 in GDP).[54] Rising sea levels have already significantly affected the tiny island nation. In 2000, the nation's major airport runway was flooded for five months.[55] Additionally, the extreme shortage of land, coupled with sea erosion, has made it difficult for Tuvaluans to find places to bury their dead.[56] Because rising seas have already eroded the nation's main burial ground, people are incorporating graves into their homes.[57]

The Maldives is another example of a SIDS that is already extremely at risk. The Maldives are 1,190 coral islands grouped into twenty-six atolls in the Arabian Sea.[58] The highest point is just 2.4 meters above sea level,[59] and the average elevation is 1–1.5 meters above sea level.[60] The population is 396,334, and tourism accounts for 28 percent of GDP.[61] The significantly larger population of the Maldives, as compared to that of Tuvalu (twelve thousand people), partially illustrates the severe problem of rising sea levels. While relocating twelve thousand people is a large undertaking, the

relocation of nearly four hundred thousand people would be a massive and difficult operation.

Unlike many other countries of the world, SIDS like Tuvalu and the Maldives are unable to adequately adapt to the predicted rise in sea levels while simultaneously living on their island homes. Developed nations, in contrast, are adequately equipped for this challenge. For example, U.S. citizens can avoid rising seas by moving inland to higher ground with the assistance of a large and wealthy government. While relocating people from low-lying coastal areas to high elevations would undoubtedly be costly and difficult, countries like the United States could adapt to rising sea levels completely on their own.

Many other countries may not be as capable of easily adapting to rising sea levels as the United States, but they are still in a much better situation than many SIDS. For example, a sea level rise of one meter could place more than one-fifth of Bangladesh (a nation of 160 million people[62]) underwater, driving millions of people to migrate to neighboring India and Burma.[63] While the potential geopolitical conflicts that could arise from such a massive forced migration are enormous, and climate-related shocks have already sparked violent conflict in the past,[64] a Bangladeshi is still in a better position than a Tuvaluan or Maldivian.[65]

Citizens of most SIDS cannot merely relocate to higher ground within their own country. These citizens do not even have the opportunity to cross a border into a neighboring country. Instead, climate change will force refugees from SIDS to leave their homelands and move across oceans to other countries. This reality is why the situation facing SIDS is so unique and dire. To citizens of many SIDS, rising sea levels threaten to effectively destroy their countries. Absent a significant global shift in climate policy and billions of dollars of investment in climate adaptation and mitigation measures, the inhabitants of SIDS may not only be among the first climate refugees, but their nations may be the first sovereignties destroyed by climate change.

III. THE POLITICS OF CLIMATE CHANGE

Climate change, described as the "silent, patient, and invisible enemy,"[66] is an extremely vexing problem for two main reasons. First, the geographic scale of climate change is truly worldwide. Nearly everyone in the world emits GHGs, and most GHGs then circle the globe. For example, a ton of carbon dioxide (CO_2) emitted over New York City has the same effect on climate change as a ton emitted over Paris, Shanghai, or Honolulu.[67] Therefore, nearly everyone in the world is contributing to climate change. Because climate change affects, indirectly or directly, every corner of the earth, any real solution must truly be a global solution.

Second, the effects of climate change will be difficult to deal with because of their temporal dimension. Once emitted, CO_2 stays in the air for up to 150 years,[68] which means that emissions created during the Industrial Revolution are much of the cause of the climate change problems facing the world today. If somehow all CO_2 emissions stopped today, the atmosphere in 2107 would still contain about 90 percent of the CO_2 that it contains today.[69]

This complex temporal dimension poses a few problems. First, absent the development of technology that removes carbon from the air, many effects of climate change are irreversible. Second, it is very difficult to decide who should pay for the negative effects of climate change. The developing world argues that the developed world should bear the brunt of the costs because the developed world has put most of the carbon into the air.[70] At the same time, much of the developed world refuses to pay unless the developing world agrees to pay.[71] Third, the largest cause of climate change comes from the burning of fossil fuels,[72] which nearly all of the world's economies rely on for energy. Therefore, while successful mitigation of the effects of climate change would likely not force economies to crumble, the transition from fossil fuel economies to renewable energy economies would take significant time, money, and political capital.

Despite the magnitude and complexity of the problem, the international community is committed, rhetorically, to aiding SIDS and other vulnerable populations in addressing climate change. This rhetorical commitment to assist the developing world with environmental degradation began to take shape in the 1972 Stockholm Declaration on the Human Environment ("Stockholm Declaration").[73] Principle 11 states that "[t]he environmental policies of all States should enhance and not adversely affect the present or future development of developing countries."[74] Principle 12 states that the international community should take into account the "circumstances and particular requirements of developing countries."[75] Finally, Principle 22 urges the development of "international law regarding liability and compensation for victims of pollution and environmental damage."[76]

This rhetorical commitment of the international community continued with the 1992 Rio Declaration on Environment and Development ("Rio Declaration").[77] The Rio Declaration reaffirmed the Stockholm Declaration[78] and added some important ideas that are necessary for the world community to address climate change. Principle 6 of the Declaration states that "[t]he special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority."[79] Principle 7 presents the important idea that "because of different contributions to environmental degradation, States have common but differentiated responsibilities."[80] Finally, Principle 15 expressly states the precautionary principle: "[w]here there are threats of serious or irreversible damage, lack of scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."[81]

The United Nations Framework Convention on Climate Change (UNFCCC), the first attempt to create a global climate change legal regime, was also drafted at the 1992 Rio Summit. The UNFCCC is a constitution-like document that embraced the precautionary principle and adopted an ultimate objective of stabilizing GHG concentrations at a level that would

prevent dangerous anthropogenic interference with the climate system.[82] To achieve this, the UNFCCC proposed returning to 1990 emissions levels.[83] Like the Rio Declaration, the UNFCCC embraced the idea of differentiated responsibilities and respective capabilities and spoke of "equitable and appropriate contributions by each [country] to the global effort" to fight climate change.[84] The UNFCCC entered into force in 1994, and as of August 2010, 194 nations are party to the Convention.[85]

The UNFCCC led to the Kyoto Protocol (Protocol),[86] which appeared to be an attempt to transition from rhetorical commitments to an actual legal commitment to address climate change. The Protocol endeavored to be a legal mechanism that addressed climate change.[87] The Protocol ultimately failed to be a true solution to climate change for many reasons. For example, the Protocol attempted to institute emissions caps on developed, but not developing, countries.[88] Therefore, large emitters that were developing, like China and India, would not have emissions caps. This led to a domestic political backlash in many developed countries, because many thought it unfair to allow developing countries to freely emit while their own countries would be bound to an international agreement that capped their GHG emissions.[89]

Protocol negotiations ultimately collapsed in 2001 when the Bush Administration formally repudiated the Protocol.[90] In 2005, the Protocol finally received a sufficient number of ratifications to enter into force;[91] however, the estimated effect of the Protocol since then has been minimal. A prominent study indicated that full compliance with the Protocol would reduce warming by a mere 0.03°C by 2100.[92]

Notwithstanding the failure of the global community to address climate change for decades, there was great hope that the fifteenth Conference of the Parties (COP 15) in Copenhagen in December 2009 would produce a comprehensive international climate change agreement. Despite the optimism leading into COP 15, the international community again failed to comprehensively address climate change.

The Copenhagen Accord (Accord),[93] which was agreed to at COP 15, appears to be an agreement to delay dealing with climate change for years while repeating much of the rhetoric seen in the prior agreements. Specifically, the Accord adopts a maximum increase in global temperature of 2°C and directs Annex I countries[94] from the Protocol to implement economy-wide targets by 2020.[95] However, these targets are not part of the Accord.[96] Essentially, the Accord is an agreement to agree on the implementation of emissions targets by 2020.

Not only has the international community failed to adopt an international legal regime that would effectively address climate change, but it appears that the commitments in the UNFCCC—the bedrock of international climate change cooperation—were forgotten. The 192 signatories to the UNFCCC committed to stabilize GHGs at concentrations that would "prevent dangerous anthropogenic interference with the climate system"[97] and pledged that the UNFCCC would guide the nations by, among other things, the "specific needs and special circumstances of developing countries."[98] Despite this rhetorical commitment to assist developing countries and promote the goal of stabilizing emissions, the Group of Eight (G-8)[99] and the Accord have stated a goal of not permitting global temperatures to rise more than 2°C.[100] However, at an increase in global temperatures of 2°C, some SIDS will likely be underwater. Acceptance of a goal that will submerge some of the most vulnerable nations is neither prevention of dangerous anthropogenic interference with the climate system, nor is it a recognition of the "specific needs and special circumstances"[101] of those nations. The UNFCCC and the Protocol have done little for SIDS, and while discussions are ongoing under the UNFCCC, the international community appears content to put off seriously dealing with climate change until another day.[102]

SIDS, like the world community, have recognized the severity of the risk they face due to climate change. Despite their effort, SIDS have failed to get the world community to effectively act to curb climate change, as

demonstrated by the decades of international negotiations discussed above that have resulted in minimal action. Therefore, SIDS have recently increased their efforts to force some type of meaningful action via both the traditional channels of international organizations and popular media. Many SIDS joined in the creation of Alliance of Small Island States (AOSIS) in 1991, which is a coalition of small islands and low-lying coastal countries that share similar development challenges and concerns about the environment.[103] The AOSIS operates as an ad hoc lobby and is the negotiating voice for SIDS within the United Nations (UN) system.[104]

In 2009, the AOSIS signed a Declaration on Climate Change, which voiced its member-nations' concerns over the effects of climate change and disappointment in the lack of progress, and it ultimately made a plea to the international community to address climate change immediately.[105] In June 2009, the Pacific SIDS introduced a draft resolution expressing deep concern over climate change and urging the UN organs to intensify their efforts to address climate change.[106]

Additionally, at COP 15, SIDS aggressively attempted to force action. The AOSIS proposed a maximum increase of temperature of 1.5°C,[107] and Tuvalu pushed for a legally binding agreement by the end of the negotiations.[108] Also, President Nasheed of the Maldives gave impassioned speeches in which he called for the world to finally address climate change.[109] Unfortunately, these attempts failed.

Understanding that the normal channels of political action have not worked to force action on climate change, SIDS have begun engaging in publicity tactics to gain attention and support from the general global public. For example, the nation of Tuvalu has virtually no exports, but Tuvaluans recently created a special-issue postage stamp raising the issue of climate change.[110] The stamp reads "Climate Change. Please Protect Our Environment."[111] In a similar headline-grabbing act in October 2009, the Maldives Cabinet donned scuba gear and convened underwater to sign a document urging countries to curb their carbon emissions.[112] Also, the

Maldives has committed to become the first carbon-neutral country.[113] These actions demonstrate that SIDS are trying everything possible to force action on climate change.

SIDS understand that climate change places them in a very precarious position and that they will be forced to leave their homelands if climate change is not seriously addressed by the world community. Despite their best efforts to focus attention on their vulnerable situations, SIDS have been unable to spark meaningful action. Nevertheless, opportunities are still available for the international community to address climate change in a significant way, and a successful global strategy could be very beneficial to SIDS.

IV. HOW TO ADDRESS CLIMATE CHANGE AND SINKING NATIONS: MITIGATION OR ADAPTATION

Because the international community is unwilling or unable to help, SIDS may have to craft solutions of their own. Two types of strategies—mitigation and adaptation—can fight the worst effects of climate change and diminish the risks associated with climate change.[114] Mitigation refers to reducing concentrations of GHGs by either reducing their sources or increasing their sinks.[115] While mitigation is absolutely necessary to comprehensively address climate change, due to its complex temporal dimension discussed above, mitigation efforts will only provide minimal relief for SIDS. Adaptation is necessary if SIDS hope to survive climate change.

Adaptation refers to adjustments in natural and human systems that attempt to moderate the effects of climate change.[116] SIDS have been engaged in adaptation strategies for years through individual, ad hoc action on a local scale.[117] For example, in Vanuatu, the Canadian government has provided funding for the relocation of one hundred villagers.[118] The relocation was necessary because frequent flooding and erosion had made the original settlement uninhabitable.[119] Similarly, the town of Playa

Rosario, Cuba, relocated five kilometers inland because of coastal erosion.[120] Additionally, on the Timor Islands, farmers have developed different staple crops, adapting to erratic rainfall and cyclones to ensure food security.[121] Other adaptation strategies targeted biodiversity and land degradation, infrastructure and settlements, and water resources.[122] Given the realities of problems facing SIDS discussed in Section II, it is necessary that the global community develop large-scale adaptation strategies.

Recognizing and identifying goals of adaptation strategies for SIDS will assist in the creation and implementation of these strategies. The first and most important goal of any adaptation strategy should be to provide climate change refugees a place to live. The international community cannot stand by and watch while people's communities and nations are swallowed up by rising sea levels, because those most vulnerable did very little to put themselves in this situation. In fact, those not immediately at risk of becoming climate change refugees emitted most of the GHGs that have created the problem of rising sea levels.[123] Also, because climate change is truly caused by everyone in the world, everyone must assist those that are most vulnerable to the effects of climate change.

Second, any adaptation strategy must keep families together, as climate change forces them to relocate. As stated above, SIDS did very little to contribute to their situation. Therefore, the international community should make it a priority to keep families together as they a relocate.

Third, any adaptation strategy should have a goal of protecting cultural practices. Each of these nations has unique cultural practices, and their survival should be protected. Assuring that families stay together will assist in achieving this goal.

Finally, the international community should seize the opportunity of assisting SIDS to adapt to climate change in order to develop large-scale climate change adaptation strategies. While adapting SIDS to climate change will be an enormous task, it pales in comparison to the requirements of adapting large populations of people to rising sea levels. The effects on

Bangladesh of a one-meter sea level rise were discussed above—displacement of tens of millions of people.[124] Other countries with very large populations are also at risk from rising sea levels. For instance, Bangkok, Thailand, has a metro-area population of over 11 million people and is only 1.5–2 meters above sea level.[125] If sea levels continue to rise, large population centers like Bangkok and Bangladesh may require evacuation. The international community should utilize the opportunity to help SIDS adapt to rising sea levels by developing a successful method and strategy of adaptation that is transferable to larger population centers.

V. LARGE-SCALE ADAPTATION STRATEGIES

A. Global Immigration Adaptation Strategy

Immigration is a possible adaptation strategy for SIDS faced with losing their homelands to rising sea levels. Under this strategy, citizens of SIDS that are no longer inhabitable would move to other countries. While immigration has the potential to partially address the problems faced by SIDS, the international community must implement it in an organized and purposeful fashion—not in an ad hoc manner as previous immigration programs. An ad hoc immigration approach implemented separately by different countries would not effectively resolve the problem and, instead, would likely transform many inhabitants of SIDS into refugees with nowhere to go. For this strategy to succeed, the global community must alter its traditional ideas about immigration. To truly deal with the large numbers of immigrants fleeing rising sea levels, the world community must create a comprehensive immigration system.

1. New Zealand's Example of Why Ad Hoc Immigration Laws Will Not Work

New Zealand's "Pacific Access Category"[126] is an example of an ad hoc immigration system that will not solve the problem facing many SIDS. New Zealand created this special category in their immigration law to allow up to

four hundred able-bodied adults, between the ages of eighteen and forty-five, who have no criminal records and who are from the SIDS of Fiji, Kiribati, Tonga, or Tuvalu, to immigrate to New Zealand each year.[127]

While New Zealand's law recognizes the precarious position of many SIDS, it raises many concerns. First, the program only allows up to four hundred people to immigrate each year. The Maldives alone has nearly four hundred thousand inhabitants,[128] and therefore, implementing such a small solution, even if replicated by numerous countries in the world, would not adequately provide timely placement for all Maldivians, let alone other inhabitants of SIDS. To be a meaningful adaptation strategy, all countries that could accommodate immigrants must adopt an immigration system that allows for a significant number of SIDS refugees.

New Zealand's law also raises important social justice issues. In addition to the program's small size, it only allows for the immigration of able-bodied adults, between the ages of eighteen and forty-five, with no criminal records. The Maldives have nearly one hundred thousand people under the age of fourteen and over fifteen thousand people over the age of sixty-five.[129] Per the New Zealand law, these inhabitants would not be able to immigrate. Moreover, the immigration program will break up families and communities. The program quota is too small and its requirements too specific to allow for many families to stay together when they immigrate. In addition to the destruction of families, climate change threatens to break apart entire communities and, in effect, lose their unique cultural heritage.

A replication of this law by other countries has the potential to leave a large portion of people from SIDS with nowhere to go. Therefore, any immigration law must allow all citizens of SIDS, and not just able-bodied, working age-adults, to immigrate.

2. Design of a Global Immigration Adaptation Strategy

Any immigration adaptation strategy must be implemented comprehensively by the world community for multiple reasons. First,

climate change is a global problem. While climate change does not uniformly affect every country, every country participated in the creation of the problem; therefore, every country should participate in the solution. Second, there is the potential for an enormous number of climate change refugees. No one can force any country to take in all SIDS climate change refugees. There must be a system of allocation, and this can only occur through international cooperation. Finally, the ultimate goal of any immigration system that assists SIDS in adapting to climate change is to provide its inhabitants a place to live. Therefore, each sovereign nation must subjugate its individual goals, such as only allowing the immigration of able-bodied, working-age adults, in order to serve the more important goal of giving people a place to live. Since all nations would share the same goals for the immigration program, such a program must be international in scope.

To achieve the second and third goals of adaptation, keeping families together and ensuring the survival of cultural heritage, immigration laws must be family-centered, not centered on individuals. Therefore, there can be no age limitations, and nations must adjust their quotas to allow entire families to immigrate together. Also, nations must define families broadly to include extended family. This is the only way to ensure that families are not broken up and that cultural heritage will continue to survive after immigration.

Once the international community recognizes these three broad reasons for implementing the adaptation strategy in its global immigration adaptation strategy, the next issue is who will open their borders to these refugees. While some countries, like New Zealand, have already opened their borders, many more countries must permit immigrants from SIDS if the immigration adaptation strategy is going to be effective.

One way to determine who should bear the cost of allowing immigrants of SIDS to live in their countries is to consider the ethical issues of climate change. Using the principle that those who caused the environmental

degradation should bear the burden of its effects, an "ethical alternative" is to provide phased immigration benefits.[130] This system would allow vulnerable populations to migrate to other countries before rising sea levels inundate their homelands. Each country would base the number of migrants it accepts on a rough proportion of the host country's cumulative GHG emissions.[131] Using the top ten historic polluters (cumulative emission from 1850–2003)[132] and using the Maldives as an example, the immigrations statistics would look something like those in Table 1.

Table 1. Implementation of Immigration Strategy on the Maldives

Country	Historic Pollution Level (%)	Total Number of Immigrants Received from the Maldives
United States	29	114,936
European Union	26	103,047
China	8	31,707
Russia	8	31,707
Germany	7	27,743
Other	7	27,743
United Kingdom	6	23,780
Japan	4	15,853
India	2	7,792
Canada	2	7,792
South Korea	1	3,963

The top ten historic polluters only account for about 93 percent of the historic pollution—leaving 7 percent unaccounted for—which means that the international community would either have to allocate just under twenty-eight thousand Maldivian refugees to countries not listed above or further split up the refugees between the top ten historic polluters.

From an environmental justice view, such a system makes sense. The basic thrust of environmental justice is that all persons, without regard to

race or socio-economic status, are entitled to equal treatment concerning the distribution of the environmental benefits and burdens of modern society.[133] The countries listed above developed and became wealthy because they have historically polluted freely and externalized many of pollution's costs. These externalized costs have been borne by people throughout the world, but the costs proved too much for SIDS to internalize, rendering their homelands uninhabitable. However, through immigration to these historic polluting nations, the SIDS migrants will receive pollution's "benefits"—the benefits associated with living in a developed nation. Therefore, these immigrants will no longer merely bear the burden caused by pollution, but will finally enjoy some of its benefits. This is an appropriate distribution of costs and benefits.[134]

Support for such a global immigration system is located within the UNFCCC. Article 3(2) discusses the "specific and special circumstances of developing countr[ies] . . . especially those that are particularly vulnerable to the adverse effects of climate change."[135] Article 4(2)(a) discusses the "need for equitable and appropriate contributions of [developed countries] to the global effort" to combat climate change.[136] Article 4(8) states that parties to the UNFCCC must give "full consideration to what actions are necessary" to meet the "specific needs and concerns of developing nations."[137] Finally, Article 4(8)(a) specifically lists "[s]mall island countries" as developing nations that the international community must fully consider.[138] These provisions recognize the need for developed nations to give developing nations, particularly SIDS, large amounts of support in adapting to climate change. Acceptance of immigrants from SIDS is an example of the type of support for developing nations envisioned by the UNFCCC.

Theoretically, a global immigration system based on the model above is an environmentally just method of solving the problems facing SIDS. The system would make the primary beneficiaries of pollution pay for the effects of the pollution. Also, it would avoid the problems that plague ad

hoc solutions, such as the one used in New Zealand. All people forced to leave their homeland would have a place to go. Given that each historic polluter would have to accept a relatively large number of people, the system design could allow most families to remain intact. In addition to keeping families together, this would assist in the preservation of unique cultural practices.

3. The Pros and Cons of a Global Immigration Adaptation Strategy

Despite the positive aspects of this immigration proposal, it still presents significant problems. Domestically, the host countries could have serious political difficulties trying to pass legislation that would commit the country to accepting a significant number of climate refugees. Throughout the world, and particularly in the United States, there has been extreme hesitancy, and in some cases outright refusal,[139] to be bound to international agreements regarding climate change. Countries could employ the same arguments, used to defeat a global climate change legal regime, to fight acceptance of climate refugees into one's country. Certain constituencies in historically polluting countries will likely argue that their particular countries should not accept the burden of taking in these climate refugees unless developing countries also agree to allow climate refugees to immigrate. As proven with the Byrd-Hagel Resolution, which effectively prohibited President Clinton from entering into the Kyoto Protocol and was passed almost unanimously in the U.S. Senate,[140] such a protectionist argument can gain significant support.

Also, anti-immigration sentiment could proliferate, making it difficult for politicians to support such a global immigration measure. History has demonstrated the power of xenophobic rhetoric and sentiment in countries around the world. For example, the U.S. Congress would likely find it difficult to pass domestic legislation that would commit the United States to accept nearly 30 percent of the world's climate refugees. Recently, in the United States, xenophobic rhetoric has gained a foothold in popular media

concerning the continuing immigration debate.[141] Legislatures in other countries around the world would likely encounter the same difficulties, particularly in countries that are less heterogeneous than the United States and have not historically accepted as many immigrants.

Despite the knee-jerk political reaction likely to occur in host nations, there are significant domestic benefits that host nations could experience by accepting new immigrants. Besides the United States and India, the rest of the top ten historic polluters are facing extreme demographic crises,[142] such as lower birth rates leading to shrinking populations.[143] Also, people are living much longer,[144] which is significantly taxing on social welfare programs aimed at keeping elderly populations—who no longer work—out of poverty (e.g., social security in the United States[145]). An influx of people into the labor force could boost the economy in many nations and assist in supporting social welfare programs that support aging generations.[146] Additionally, the acceptance of immigrants could enhance cultural diversity in many host nations.

While the comprehensive global immigration strategy appears to be a viable solution to the problem currently facing SIDS, it is not perfect. SIDS are sovereign nations, and any immigration strategy has the potential to completely disband a sovereign nation. The citizens of each SIDS would be absorbed by the nation to which they would immigrate. To allow climate change to force a sovereign nation to dissolve when the nation contributed so little to its own demise does not seem fair. Despite the fact that a just redistribution of benefits would occur under such an immigration strategy, there are losses for which the global community could not compensate the SIDS. One's sovereign homeland is not a tangible good that can be assigned adequate compensation. While most families may stay together under the global immigration regime described above, the society's unique ways of life and historical practices would likely disappear. The sentiment of many island-nation citizens is that they do not want to abandon their homelands or be absorbed into other cultures where indigenous people already struggle

for acceptance.[147] An analyst with the Palauan Ministry of Resources and Development said, "It is about much more than just finding food and shelter . . . . It is about your identity."[148]

B. Relocation Adaptation Strategy

Mohamed Nasheed, the president of the Maldives, has a new idea for adaptation that aims to avoid some of the adverse effects of an immigration strategy. President Nasheed created a sovereign wealth fund, generated by a portion of the country's annual billion-dollar tourist industry, and plans to use it to buy his country a new homeland.[149] The idea is that the Maldives would buy a large parcel of land from another country and then relocate its entire population. This way, the Maldives would still be a sovereign nation, just in another location. President Nasheed said that while Maldivians do not want to leave their island homes, they also "do not want to be climate refugees living in tents for decades."[150]

This adaptation strategy is creative and raises a whole host of novel legal and political issues. In modern history, no country has purchased land from another country to completely relocate; therefore, there is no analogy to assist in developing and implementing such an adaptation technique. However, much of the same theoretical, social, and environmental justice concerns that underpin the global immigration strategy provide guidance for the design of this relocation adaptation strategy.

1. Who Pays for and Provides the Land for Relocation?

For the environmental justice reasons discussed above, it would be fundamentally unfair to force SIDS to pay for their own relocation. The environmental justice rationale supporting the idea—that the world's historic polluters should accept climate change refugees as immigrants—also supports the argument that a historic polluter should provide a piece of land for the relocated SIDS. Also, the rest of the historic polluters should

compensate that country for providing the land. This system would most fairly distribute the true cost of pollution.

The rationale behind the U.S. Constitution's takings clause provides support for such a redistributive justice approach. Under this law, if the government takes private property for public use, the government must compensate the private property owner,[151] because it would be unfair for the private property owner to bear the burden of providing a benefit to the public. A similar situation has occurred in the context of climate change and SIDS. Historic polluters have industrialized by emitting large amounts of GHGs, and those GHGs have raised global temperatures, which in turn, have caused sea levels to rise and submerge SIDS property. In other words, historic polluters have "taken" SIDS property for the benefit of their own populations. It is unfair for SIDS to bear the cost of the pollution while the historic polluters enjoy all the benefits; therefore, it is socially and environmentally just for the historic polluters to pay for the "taking" of SIDS.

Similarly, the rationale underpinning the United States' nuisance law supports this redistributive justice approach. A state, county, or municipality can bring a public nuisance suit against a party that is unreasonably interfering with a right common to the public (e.g., clean air, clean water, etc.).[152] Here, the right common to any particular SIDS is to be a sovereign nation (i.e., to not have their nation subsumed by rising sea levels caused by polluting nations). Normally, if the plaintiff succeeds in her public nuisance action, the defendant is enjoined from continuing the unreasonable activity.[153] In the climate change situation, enjoining every country from continuing to emit GHGs is impossible. Nevertheless, the international community could use monetary damages to put SIDS as close to their rightful position as possible (i.e., the position the SIDS would have enjoyed had rising sea levels not made their nation uninhabitable). That rightful position is existence as a sovereign nation. Therefore, using the nuisance analogy, the countries causing the nuisance should fully

compensate a SIDS that has been forced to relocate, restoring its status as a sovereign nation. This can be done if one nuisance-causing nation provides the land for relocation and the rest of the nuisance-causing nations compensate the nation that provided the land. This way, the nations that do not provide land for relocation are not enjoying a windfall.

This model for the relocation strategy follows a similar model to the immigration strategy. Each country should pay a certain percentage of the costs associated with the relocation of a SIDS, determined by the country's historic pollution levels. For example, if it cost $1 billion to pay for the land being given to the SIDS, the cost apportionment could follow Table 2's distribution.

Table 2. Hypothetical Cost Apportionment for Relocation of a SIDS

Country	Historic Pollution Level (%)	Proportion of Cost to be Paid
United States	29	$290,000,000
European Union	26	$260,000,000
China	8	$80,000,000
Russia	8	$80,000,000
Germany	7	$70,000,000
Other	7	$70,000,000
United Kingdom	6	$60,000,000
Japan	4	$40,000,000
India	2	$20,000,000
Canada	2	$20,000,000
South Korea	1	$10,000,000

As with the immigration strategy, 7 percent of costs are not covered by the top ten historic polluters. Therefore, under the hypothetical, $70 million would have to either be apportioned among the top ten or be paid by countries that are not in the top ten to make up the difference.

Once every country has been apportioned its fair share of the cost, the global community must determine who will provide land for the relocation. While unlikely, it is possible that a country will voluntarily decide to provide the land. In that case, the rest of the countries should compensate that country for its land. For example, if Australia agreed to provide the land for relocation and that land is worth $1 billion, Australia would be paid $290 million by the United States (the United States emitted 29 percent of historic GHG emissions), $260 million would be paid by the European Union (the European Union emitted 26 percent of historic GHG emissions), and so forth. This regime would ensure that the benefits and burdens are apportioned properly. Every country would pay its fair share, and the SIDS would share in the benefits derived by the historic polluting nations.

Like the global immigration adaptation strategy discussed above, the UNFCCC appears to provide support for this adaptation strategy. Article 3 urges countries to protect the climate on the "basis of equity and in accordance with . . . common but differentiated responsibilities and respective capabilities."[154] Article 4 expressly states that developed nations must consider the "specific needs and concerns of developing countr[ies]… arising from the adverse effects of climate change and/or the impact of the implementation of response measures."[155]

2. Political Problems of the Relocation Adaptation Strategy

This relocation adaptation strategy clearly creates a host of problems. First, the international political problems are significant. For this type of program to function, countries would have to accept fault for historic pollution. Recently, there appears to be some international consensus emerging that developed countries must pay to help developing countries adapt to climate change. The European Union recently unveiled a proposal in which industrialized nations and economically advanced developing countries would provide $33 billion to $74 billion a year to help developing countries adapt to climate change.[156] Given this current trend, it appears

possible that the international community may be able to politically agree to a program such as this adaptation relocation regime.

Domestic politics would create another enormous hurdle because a country would be unlikely to cede a portion of its sovereign territory for the relocation of a SIDS. However, support may be increasing in some countries. The governing party in Australia, the Labor Party, authored a policy paper entitled "Our Drowning Neighbors," which states that Australia should help facilitate an international coalition to address the unique problems posed by climate change to developing nations.[157] The environmental justice aspects of the problem might actually create a political atmosphere in which a country willingly agrees to cede part of its sovereign territory to a SIDS. Even so, absent a nation voluntarily providing land, domestic politics would almost certainly prevent a relocation adaptation strategy from working.

Another problem raised by the relocation adaptation strategy is the sovereign status of the newly relocated SIDS. The Montevideo Convention on Rights and Duties of States, a convention agreed to by the United States and seventeen Latin American and Caribbean nations,[158] could be utilized as it attempted to define what it means to be a "sovereign state." Article 1 indicates that a state should possess (1) a permanent population, (2) a defined territory, (3) a government, and (4) the capacity to enter into relations with other States.[159] Article 5 states that "[t]he fundamental rights of [a] state are not susceptible of being affected in any manner whatsoever." Similarly, Article 8 states that "[n]o state has the right to intervene in the internal . . . affairs of another,"[160] and Article 11 states that "[t]he territory of a state is inviolable."[161] In short, to be a true state, the relocated SIDS would have to be completely sovereign. When a host country agrees to relocate a SIDS onto its territory, the host must not only agree to cede land to a SIDS, but also political sovereignty over that land.

Even assuming that the previously discussed problems are solved—that there is an international political agreement to create the relocation

adaptation strategy, a country agrees to cede land, and the SIDS is allowed to be sovereign—there are still additional problems that the international community must resolve before implementing a relocation strategy.

3. Further Problems: What Land is Given to the Relocating SIDS?

Deciding which land and what type of land to give to the relocating SIDS remains a difficult issue. First, the SIDS must be given land that is inhabitable. Therefore, the world community cannot just give a SIDS a large chunk of the Sahara Desert and call the program a success. Similarly, the world community cannot give the SIDS land that has been so polluted or otherwise degraded that it cannot be safely inhabited. Between these two extreme examples, difficult issues must be solved before such a relocation program can be implemented.

How much land must be given to a relocated SIDS? Clearly, the SIDS must be given enough land to accommodate its population, but how much land is that? Dhaka, Bangladesh, has a population density of nearly 118,000 people per square mile.[162] At that density rate, the Maldives would only need about 3.5 square miles of land. At the same time, the Maldives has four-fifths the population of Wyoming, which is nearly 98,000 square miles.[163] While neither of these two extremes provides the answer, they both demonstrate the difficulty of the problem. Is it fair to give a SIDS just enough land to support their current population? Or should a relocated SIDS be given enough land to expand?

These questions can be partially answered by ascertaining whether the land given would already contain necessary infrastructure. If a portion of an already-built city is provided to the SIDS, less land would be necessary to support a population. However, if open terrain is given to a SIDS, more land will be necessary. Another relevant consideration is the population growth. The Maldives currently has a negative population growth of 0.168 percent.[164] Should the amount of land given to a SIDS, like the Maldives, be

based on an assumption that the population will continue to shrink or should sufficient land be given to allow reasonable growth?

Second, what type of land should be given to the relocated SIDS? Many SIDS populations are accustomed to surviving in tropical environments. Based on this, is it acceptable to give them a parcel of mountainous terrain in a northern-latitude county—a terrain in which they have no experience living? Also, what natural resources should the land possess? Most SIDS themselves have few natural resources. Does this fact justify giving the relocated SIDS marginal lands? The character of the land given (i.e., land with or without infrastructure) will likely assist in answering this question. If the land has no infrastructure, the land will need more natural resources to allow the relocated SIDS to build their new nation. Fewer natural resources would be necessary if the land already has infrastructure.

These types of questions have never been dealt with before and do not have one correct answer. The difficulty of trying to develop a global climate change legal regime demonstrates that answering any one of these questions will be extremely difficult, if not impossible. Perhaps the most interesting issue raised by these questions is whether the world community is comfortable in making these types of decisions. The parties that make the decisions about where a SIDS will relocate, what land they get, how rich in natural resources the land is, etc., will effectively be deciding the future for SIDS. Providing the relocated SIDS with a large portion of resource-rich land will provide it with the opportunity to develop and prosper. In contrast, providing it just enough marginal land to continue its existence would mean that a SIDS, already plagued by poverty, will continue to be one of the poorest nations in the world, just in a new location. In a relocation adaptation strategy, these decision makers are essentially deciding the fate of SIDS.

The Endangered Species Act[165] (ESA) suggests, by analogy, that some lawmakers would be comfortable making such decisions about the continued existence and viability of SIDS. The ESA Amendments of 1978

created the Endangered Species Committee,[166] colloquially known as the "god squad." The god squad is authorized to exempt a federal agency from compliance with the ESA's strict provisions.[167] Therefore, in the right circumstances, the ESA effectively gives the god squad the ability to decide on the continued existence of an endangered species. The existence of the god squad shows that some are comfortable making decisions fraught with moral and philosophical dilemmas. While the dilemmas facing the god squad are not completely analogous to the type of dilemmas facing the decision-making body that would determine the future viability of SIDS, the mere existence of the "god squad" suggests that some would be comfortable making such fundamental decisions about the continued existence of a nation.

C. Comparison of the Global Immigration and Relocation Adaptation Strategies

Both adaptation strategies, the global immigration strategy and the relocation strategy, have advantages and disadvantages. Similarly, both create significant problems that could prove insurmountable.

The global immigration strategy could prove to be a very useful strategy. Most importantly, immigration would provide climate change refugees a place to go. It would also allow families to stay together and large portions of the populations to immigrate together, ensuring unique cultural practices have the potential to survive.

However, this strategy also poses some significant challenges. First, the global immigration strategy would require a global commitment to providing a home for all the climate refugees. Any global commitment of this size will be difficult to agree upon. In addition to the international political difficulties, domestic politics will pose a significant problem. For this program to work, developed countries will have to accept not only "fault" for climate change but also large amounts of immigrants. While the science of climate change is forcing developed countries to accept "fault," it

will likely be very difficult to convince domestic constituencies that the country must accept an influx of people from some of the poorest nations on earth. If these political hurdles can be overcome, there will likely be economic benefits for those countries accepting immigrants in the form of a larger labor force and tax base.

Alternatively, the global relocation strategy will prove significantly more difficult to implement. While it would assure placement for inhabitants of SIDS that are no longer habitable and would keep families and cultures together, its implementation is virtually impossible. This strategy suffers the same difficulties as the global immigration strategy: the international community would have to agree to implement this strategy, which could prove very difficult. Also, developed nations would have to accept fault and give up sovereign territory. While the developed world may accept fault, it is unlikely that a country would willingly cede sovereign territory. Even if a country agreed to give up territory, there are numerous issues concerning how the relocated nation would live and develop. While the relocation adaptation strategy would better assure that families are kept together, cultural practices are preserved, and SIDS remain sovereign, the strategy will likely never be implemented. Therefore, the international community should focus its efforts on developing a global immigration strategy assisting SIDS that will soon be uninhabitable due to the effects of climate change, such as the rising sea level.

VI. CONCLUSION

The science is clear that increased global temperatures are causing sea levels to rise and that these rising sea levels threaten the existence of low-lying nations. Despite realizing this certainty, many countries and international organizations appear content to delay dealing with the issue. Regardless of SIDS' attempts to bring awareness to the issue, garner support, and force action, this delay persists.

The time has come for the world community to seriously address the problem of sinking nations. The failure of political will at COP 15 cannot continue in future climate change negotiations. Agreements to agree in the future are no longer sufficient. The world community must completely understand and accept that economic growth based on rapid exploitation of fossil fuels (which has been the *modus operandi* for centuries) will lead to the complete destruction of sovereign nations within centuries. Rather than ignoring the problem or putting complete blind faith in the rapid development of a massive technological solution, the international community must seriously consider the development and implementation of large-scale adaptation strategies like those discussed in this article.

This sobering discussion of how to ensure that the populations of subsumed nations do not become climate refugees living in tents for decades—exactly what President Nasheed of the Maldives wants to avoid—must begin in earnest today. The complexity of the issue of how to adapt entire nations to climate change will take time and effort. The UN should make it a priority to develop this discussion at the 2010 COP 16 in Cancun, Mexico, at the 2011 COP 17 in South Africa, and at the 2012 COP 18, which will be held in either Qatar or South Korea.[168] Furthermore, the UN should seriously consider convening a special large-scale climate change adaptation conference for nations that are facing destruction from rising sea levels. While development and implementation of large-scale climate change adaptation strategies will not be easy, it is an urgent and necessary reality.

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[1] Transcript available at http://www.presidencymaldives.gov.mv/4/publications/gallery/gallery/?ref=1,6,2873.

[2] Neil MacFarquhar, *Refugees Join List of Climate-Change Issues*, N.Y. TIMES, May 29, 2009, at A4.

[3] *See id.* King tide season occurs twice a year, once in summer and once in winter, and is characterized by extremely high tides.

[4] *Id.*
[5] *See id.*
[6] *See* Complaint at 1, Native Vill. of Kivalina v. ExxonMobil Corp., 663 F. Supp. 2d 863 (N.D. Cal. 2008) (No. Civ. 08 1138).
[7] *Id.*
[8] *See id* at 2.
[9] *Native Vill, of Kivalina*, 663 F. Supp. 2d at 882 (N.D. Cal. 2009) (granting Defendants' motion for dismissal for lack of jurisdiction).
[10] *See* Notice of Appeal at 1, *Native Vill.of Kivalina*, 663 F. Supp. 2d 683.
[11] *See* NICHOLAS STERN, THE ECONOMICS OF CLIMATE CHANGE: THE STERN REVIEW 138 (Cambridge Univ. Press 2007), *available at* http://www.hm-treasury.gov.uk/d/Executive_Summary.pdf, viii.
[12] *Id.* at 138–39.
[13] *See* David Adam, *Sea Level Could Rise More Than a Metre by 2100, Say Experts: Increase much higher than previously forecast, Change could displace 10% of world's population*, GUARDIAN (London), Mar. 11, 2009, at 17.
[14] Running Grass, Envtl. Justice Coordinator, Envtl. Protection Agency, Address at Seattle University School of Law (Mar. 3, 2010).
[15] *See* Alexander Gillespie, *Small Island States in the Face of Climatic Change: the End of the Line in International Environmental Responsibility*, 22 UCLA J. ENVT'L L. & POL'Y 107, 113 (2004).
[16] Randeep Ramseh, *Paradise almost lost: Maldives seek to buy a new homeland*, GUARDIAN (London), Nov. 10, 2008, at 1.
[17] *List of Small Island Developing States*, UNITED NATIONS, http://www.un.org/special-rep/ohrlls/sid/list.htm. The fifty two SIDS in the world are American Samoa, Anguilla, Antigua and Barbuda, Aruba, Bahamas, Bahrain, Barbados, Belize, British Virgin Islands, Cape Verde, Commonwealth of Northern Marianas, Comoros, Cook Islands, Cuba, Dominica, Dominican Republic, Fiji, Grenada, Guam, Guinea Bissau, Guyana, Haiti, Jamaica, Kiribati, Maldives, Marshall Islands, Federated States of Micronesia, French Polynesia, Mauritius, Montserrat, Nauru, Netherlands Antilles, New Calendonia, Niue, Palau, Papua New Guinea, Puerto Rico, Samoa, Sao Tome and Principe, Singapore, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Seychelles, Solomon Islands, Suriname, Timor-Leste, Tonga, Trinidad and Tobago, Tuvalu, United States Virgin Islands, and Vanuatu. *See id.*
[18] *See id.*
[19] U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE [UNFCCC], VULNERABILITY AND ADAPTATION TO CLIMATE CHANGE IN SMALL ISLAND DEVELOPING STATES 7 (2007), *available at* http://unfccc.int/files/adaptation/adverse_effects_and_response_measures_art_48/application/pdf/200702_sids_adaptation_bg.pdf (last visited Nov. 12, 2010).
[20] The twelve SIDS having LDC status are Cape Verde, Comoros, Guinea Bissau, Haiti, Kiribati, Maldives, Samoa, Sao Tome and Principe, Solomon Islands, Timor-Leste, Tuvalu, Vanuatu.
[21] *About LDCs*, UNITED NATIONS, http://www.unohrlls.org/en/ldc/25 (last visited Oct. 4, 2010).

[22] *See* UNFCCC, *supra* note 19, at 4.
[23] *See id.*
[24] *See Climate Change- Health and Environmental Effect*, WWW.EPA.GOV, http://www.epa.gov/climatechange/effects/coastal/index.html. *See also*, *Soil Salinisation*, EUROPEAN UNION JOINT RES. CTR, http://eusoils.jrc.ec.europa.eu/library/themes/salinization/ (last visited Nov.17, 2010).
[25] *See* D.S.G. Pollock, *Nitrates, water and salt: maintain the fertility of agriculture*, 32 INTERDISC. SCI. REV. 350, 358–59 (2007).
[26] *See* UNFCCC, *supra* note 19, at 4–5.
[27] *See The World Factbook: Tuvalu*, CENT. INTELLIGENCE AGENCY, https://www.cia.gov/library/publications/theworldfactbook/geos/tv.html (last visited Nov. 17, 2010) [hereinafter C.I.A. Tuvalu]; *The World Factbook: Tuvalu*, CENT. INTELLIGENCE AGENCY, https://www.cia.gov/library/publications/the-world-factbook/geos/mv.html (last visited Nov. 17, 2010).
[28] Richard B. Alley et al., *Summary for Policymakers*, *in* CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 1, 10 (S. Solomon et al. eds., Cambridge Univ. Press 2007).
[29] *See e.g.,* Peter Henderson, *Climate change may cost California billions*, REUTERS, Apr. 2, 2009, *available at* http://www.reuters.com/article/idUSTRE5314S520090402.
[30] IPCC, THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (2007).
[31] *See* Gerald A. Meehl et al., *Global Climate Projections*, *in* CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 749 (S. Solomon et al. eds., Cambridge Univ. Press 2007).
[32] GHGs is a term used for many different types of gases that contribute to global warming. The principal GHGs are carbon dioxide (CO_2), nitrous oxide (N_2O), various types of hydrofluorocarbons (HFCs), various perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). *See* MICHAEL B. GERRARD, GLOBAL CLIMATE CHANGE AND U.S. LAW 5–6 (2008).
[33] Meehl et al., *supra* note 31, at 749.
[34] *Id.* at 750.
[35] Alley et al., *supra* note 28, at 21.
[36] *Id.* at 17.
[37] *Id.*
[38] *Id.*
[39] *See* Meehl et al., *supra* note 31.
[40] WILLIAM D. NORDHAUS & JOSEPH BOYER, WARMING THE WORLD: ECONOMIC MODELS OF GLOBAL WARMING 91 (MIT Press 2001). These benefits, like those discussed above, are being enjoyed by some areas in northern latitude countries like Canada and Russia.
[41] *See id.* at 81. For example, India and Africa will be massive losers. Eric Posner & Cass Sunstein *in Climate Change Justice*, 96 GEO. L. J. 1565, 1581 (2008), estimate that a 2.5 °C increase in global temperatures would cause India to lose 3.6 million years of life and sub-Saharan Africa to nearly 26.7 million years of life from climate-related diseases.

[42] *See generally* Stephen H. Schneider et al., *Assessing key vulnerability and the risk from climate change*, *in* CONTRIBUTION OF WORKING GROUP II TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 788 (M.L. Parry et al. eds., Cambridge Univ. Press 2007).
[43] NICHOLAS STERN, *supra* note 11.
[44] *See* Stephen Stromberg, *How Washington failed on climate change*, Washington Post, July 29, 2010, at A23.
[45] U.S. GEOLOGICAL SURVEY, ABRUPT CLIMATE CHANGE 23–24 (2008).
[46] *See id.*
[47] *See* Adam, *supra* note 13, at 17.
[48] *Id.*
[49] *Id.*
[50] *Id.*
[51] *Id.*
[52] *See* W.T. Pfeffer, J.T. Harper & S. O'Neel, *Kinematic Constraints on Glacial Contributions to 21st-Century Seal Level Rise*, 321 SCIENCE 1268, 1340–43 (2008).
[53] *See* C.I.A. Tuvalu, *supra* note 27.
[54] *Id.*
[55] *See* ANDREW SIMMS, ECOLOGICAL DEBT: GLOBAL WARMING AND THE WEALTH OF NATIONS 33 (2nd ed. 2009).
[56] *See id.* at 31.
[57] *Id.*
[58] *See The World Factbook: Maldives*, CENT. INTELLIGENCE AGENCY, https://www.cia.gov/library/publications/the-world-factbook/geos/mv.html (last visited Oct. 3, 2010) [hereinafter C.I.A. Maldives].
[59] *See id.*
[60] *See* Gillespie, *supra* note 15.
[61] C.I.A. Maldives, *supra* note 58.
[62] *See The World Factbook: Bangladesh*, CENT. INTELLIGENCE AGENCY, https://www.cia.gov/library/publications/the-world-factbook/geos/bg.html (last visited Oct. 3, 2010).
[63] *See* STERN, *supra* note 11, at 104.
[64] Climate-shocks have sparked violence all over the world. For a brief discussion of the climate shocks and resulting violence in the West African Sahel and Northern Nigeria, see Anthony Nyong, *Climate Conflicts in West Africa, in* ENVIRONMENTAL CHANGE AND SECURITY PROGRAM, REPORT 36–44 (Geoffrey D. Dabelko et al. eds., 2007), *available at* http://wilsoncenter.org/topics/pubs/ECSP_report_12.pdf.
[65] STERN, *supra* note 11, at 138.
[66] Mohammed Nasheed, President of the Maldives, Address at Fifteenth Session of the Conference of Parties (Dec. 14, 2009).
[67] *See* Michael B. Gerrard, *Introduction and Overview*, *in* GLOBAL CLIMATE CHANGE AND U.S. LAW 5–6 (Michael B. Gerrard ed. 2008).
[68] *See* Piers Forester et al., *Changes in Atmospheric Constituents and in Radiative Forcing*, *in* CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT

REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 138 (S. Solomon et al. eds., Cambridge Univ. Press 2007).
[69] Eric A. Posner & Cass R. Sunstein, *supra* note 41, at 1579.
[70] *See* Associated Press, *Brazil Seeks West's Aid on Amazon*, N.Y. TIMES, Nov. 27, 2009, at A3.
[71] *See* S. Res. 98, 105th Cong. (1997) (enacted).
[72] LENNY BERNSTEIN ET AL, CLIMATE CHANGE 2007: SYNTHESIS REPORT, SUMMARY FOR POLICY MAKERS 5 IN THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (2007).
[73] United Nations Conference on the Human Environment, June 16, 1972, *Report,* U.N. Doc A/CONF. 48/14 (1973) [hereinafter Stockholm Declaration].
[74] *Id*. at princ. 11
[75] *Id.* at princ. 12.
[76] *Id.* at princ. 22.
[77] United Nations Conference on Environment and Development., Rio de Janeiro, Braz., June 3–14, 1992, *Rio Declaration on the Environment and Development*, Pmbl, U.N. Doc. A/CONF.151-26 (June 14, 1992).
[78] *Id.*
[79] *Id*. at princ. 6.
[80] *Id.* at princ. 7.
[81] *Id.* at princ. 15. The Bush Administration argued that the precautionary principle is not a principle of international law because it is not widely adopted. Despite the Bush Administration's claim, the principle appears to be adopted in many places around the world. For example, Article 225 of the Brazilian Constitution appears to embrace the precautionary principle. *See* BRAZ. CONST. tit. IX, art. 225. Also, despite the Bush Administration's claims, some domestic legislation has embraced the principle: the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. §§ 301–339(a) (2008), and the Federal Insecticide, Fungicide, and Rodentcide Act, 7 U.S.C. §§ 136–136(y) (2008), both appear to embrace it. Under both statutes, premarket approval is required before a manufacturer can market their product. The burden is placed on the manufacturer to prove their product is safe for human use. (This is similar to Europe's "Registration, Evaluation, Authorization and Restriction" program (REACH)). *See* European Union, *REACH*, http://ec.europa.eu/environment/chemicals/reach/reach_intro.htm. Also, some U.S. courts have embraced the principle. The Court of Appeals for the District of Columbia Circuit clearly embraced the principle in *Ethyl Corp. v. Env't Prot. Agency*, when it said "[w]here a statute is precautionary in nature, the evidence difficult to come by, uncertain, or conflicting because it is on the frontiers of scientific knowledge, the regulations designed to protect the public health, and the decision that of an expert administrator, we will not demand rigorous step-by-step proof of cause and effect." 541 F.2d 1, 20 (D.C. Cir. 1976).
[82] United Nations Framework Convention on Climate Change art. 2, May 9, 1992, 31 I.L.M. 849 (1992) (entered into force May 21, 1994). [hereinafter UNFCCC].
[83] *Id.* at art. 4.
[84] *Id.* at art. 3, 4.

[85] *See Parties and Observers*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/parties_and_observers/items/2704.php (last visited Nov. 17, 2010).
[86] Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, 2302 U.N.T.S. 162.
[87] Article 3 of the Kyoto Protocol established emissions reduction targets and timetables pursuant to which parties must reduce carbon dioxide emissions to 1990 levels by an average of 5 percent below their 1990 levels over a five-year commitments period from 2008-2012. *See id*.
[88] *Id.* at art. 3.
[89] An example of this political backlash occurred in the United States in 1997. That year, the U.S. Senate unanimously adopted the Byrd Hagel Resolution, which prohibited the United States from agreeing to cap emissions unless developed countries did the same. *See* S. Res. 98, 105th Cong. (1997) (enacted).
[90] *See* Jeffrey Kluger et al., *A Climate of Despair; Bush's hard line has stunned environmentalists, but with concerted action—and new technologies—it's not too late to cool down the greenhouse*, TIME, Apr. 9, 2001, at 19.
[91] UNFCCC, *Status of Ratification of the Kyoto Protocol*, available at http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php.
[92] *See* NORDHAUS & BOYER, *supra* note 37, at 152–53.
[93] Copenhagen Accord, Decision -/CP.15 (Dec. 18, 2009), available at http://unfccc.int/resource/docs/2009/cop15/eng/l07.pdf.
[94] The Annex I countries to the Kyoto Protocol are Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, European Union, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxemburg, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, and the United States. *See List of Annex I Parties to the Convention*, UNITED NATIONS FRAMWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/parties_and_observers/parties/annex_i/items/2774.php (last visited Nov. 17, 2010).
[95] *See* United Nations Framework Convention on Climate Change, Dec. 7–18, 2009, *Copenhagen Accord*, Decision -/CP.15 (Dec. 18, 2009), *available at* http://unfccc.int/resource/docs/2009/cop15/eng/l07.pdf.
[96] *Id.*
[97] *Id.* at art. 2.
[98] *Id.* at art. 3(1).
[99] The members of the G-8 are France, Germany, Italy, Japan, Russia, United Kingdom, United States, and the European Union. G-8, http://g8.gc.ca/about (last visited Oct. 3, 2010).
[100] G-8, Declaration of the Leader: The Major Economies Forum on Energy and Climate (2009); Copenhagen Accord, Draft Decision -/CP.15 (Dec. 18, 2009), available at http://unfccc.int/resource/docs/2009/cop15/eng/l07.pdf.
[101] Kyoto Protocol, *supra* note 86, at art. 3(1).

[102] *See* Helen Cooper, *Leaders Will Delay Deal on Climate*, N.Y. TIMES, Nov. 14, 2009, at A6.
[103] *See* Alliance of Small Island States, *About AOSIS*, http://www.sidsnet.org/aosis/about.html (last visited Nov. 17, 2010).
[104] Alliance of Small Island States, *About AOSIS*, available at http://www.sidsnet.org/aosis/about.html.
[105] Alliance of Small Island States, *AOSIS Declaration on Climate Change* (2009), http://www.sidsnet.org/aosis/documents/AOSIS%20Summit%20Declaration%20Sept%2021%20FINAL.pdf.
[106] *See General Assembly, Expressing Deep Concern, Invites Major UN Organs to Intensify Efforts in Addressing Security Implications of Climate Change*, UNITED NATIONS (June 3, 2009), http://www.un.org/News/Press/docs/2009/ga10830.doc.htm.
[107] Alliance of Small Island States, *AOSIS Climate Change Summit*, available at http://www.sidsnet.org/aosis/summit2009.html.
[108] Janet Raloff, *Copenhagen climate summit yields 'real deal' to limit greenhouse gases*, SCIENCE NEWS, Jan. 30, 2010, at 16.
[109] *See* 350.org, *President Nasheed Speech – December 14th, 2009*, available at http://www.350.org/nasheed; Mohamed Nasheed, President of the Maldives, Address at the COP 15 in Copenhagen, December 17, 2009.
[110] *See* Simms, *supra* note 55, at 33–34.
[111] *Id.* at 34.
[112] Bharatha Mallawarchi, *Maldives all set for underwater Cabinet meeting,* ASSOCIATED PRESS, Oct. 18, 2009, at International News.
[113] *See* Nasheed, *supra* note 66.
[114] *See* Alley et al., *supra* note 28, at 19.
[115] For a good discussion about mitigation measures and a proposal that would stabilize emissions at 2000 levels using existing technologies, see Pacala and R. Socolow, *Stabilization Wedges: Solving the Climate Problem for the Next 50 Years with Current Technologies*, 305 SCIENCE 901, 968–72 (2004).
[116] *See* Ian Burton et al, Adaptation to Climate Change: International Policy Options 1, Pew Center on Global Climate Change (2006).
[117] *See* UNFCCC, *supra* note 19, at 17.
[118] *Id.*
[119] *Id.*
[120] *Id.*
[121] *Id.*
[122] *Id.* at 18.
[123] *See Climate Analysis Indicators Tool*, WORLD RES. INST., http://cait.wri.org (last visited Nov. 11, 2010).
[124] *See* STERN, *supra* note 11, at 104.
[125] *See* Apinya Wipatayotin, *Rising Seas Threaten Nation,* BANGKOK POST, Nov. 18, 2009, *available at* http://www.bangkokpost.com/news/local/27596/rising-seas-threaten-nation.

[126] New Zealand Department of Labor, *What is required—Pacific Access Category*, http://www.immigration.govt.nz/migrant/stream/live/pacificaccess/canimovetonz/whatisrequired.
[127] *Id.*
[128] *See* C.I.A. Maldives, *supra* note 58.
[129] *See id.*
[130] Sujatha Byravan & Sudhir Chella Rajan*, Providing New Homes for Climate Exiles*, 6 CLIMATE POLICY 247, 249 (2006), *available at* http://ssrn.com/abstract=950329.
[131] *Id.*
[132] *See* Posner & Sunstein, *supra* note 41, at 1579; *Climate Analysis Indicators Tool*, WORLD RES. INST., http://cait.wri.org (last visited Nov. 11, 2010).
[133] *See* Kirsten H. Engel, *Brownfield Initiated and Environmental Justice: Second-Class Cleanups or Market-Based Equity?*, 13 J. NAT. RESOURCES & ENVTL. L. 317, 326 (1998).
[134] *See* Rebecca Tsosie, *Indigenous People and Environmental Justice: The Impact of Climate Change*, 78 U. COLO. L. REV. 1625, 1645 (2007).
[135] UNFCC, *supra* note 73, at art. 3(2).
[136] *Id.* at art. 4(2)(a).
[137] *Id.* at art. 4(8).
[138] *Id.* at art. 4(b)(a).
[139] *See* S. Res. 98, 105th Cong. (1997) (enacted).
[140] *Id.*
[141] One example of this anti-immigration rhetoric was the Lou Dobbs Show on CNN. Lou Dobbs has consistently engaged in populist diatribes about Hispanic immigrants.
[142] *See* BEN J. WATTENBERG, FEWER: HOW THE NEW DEMOGRAPHY OF DEPOPULATION WILL SHAPE OUR FUTURE 210 (Ivan R. Dee Pub. 2004).
[143] The "replacement" level, that level at which a population stays the same, is a Total Fertility Rate (TFR) of 2.1 children per woman. *Id.* at 9. Many countries have a TFR much lower than 2.1, which could lead to a demographic crisis. For example, Japan had a TFR of 1.32 from 2000-2005. *Id.* at 210.
[144] Life expectancy worldwide is estimated to be an average of 74.3 years by 2050. *Id.* at 118. In 1950, it was only an average of 46.5 years. *Id.* It is projected that 27.9 percent of Europe will be over the age of 65 by 2050, as compared to 14.7 percent in 2000. *Id.*
[145] In the United States in 1955, there were nearly nine workers for every retiree. *Id.* at 120. Under current projections, the ratio will fall to two workers for every retiree by 2035. *Id.* Simple math demonstrates that fewer people will be paying into social security and more will be taking money out.
[146] *Id.* at 191–206.
[147] *See* MacFarquhar, *supra* note 2, at A4.
[148] *Id.*
[149] Ramseh, *supra* note 16.
[150] *Id.*
[151] *See* U.S. CONST. amend. V stating that no "private property shall be taken for public use, without just compensation." Regulatory takings jurisprudence has developed two *per se* tests and a widely used balancing test. Any permanent physical invasion is a taking.

See Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419 (1982). Also, any complete diminution in economic value of property is a taking. *See* Lucas v. South Carolina Coastal Council, 505 U.S. 1003 (1992). If neither *Loretto* or *Lucas* apply, the court will apply the test from *Penn Central Transportation Co. v. City of New York*, 438 U.S. 104 (1978), in which the court balances (1) the character of the government action, (2) the economic impact of the regulation on the claimant, and (3) the extent to which the regulation interfered with distinct investment-backed expectations.

[152] *See* RESTATEMENT (SECOND) OF TORTS § 821B (1978). In determining whether interference with a public right is unreasonable, the Restatement directs the court to consider whether the conduct (1) involves a significant interference with the public health, safety, comfort, or convenience; (2) is illegal; or (3) is of a continuing or has produced a long-lasting effect on the public right that the actor has reason to know will be significant. *See id.*

[153] *See* Georgia v. Tennessee Copper Co., 206 U.S. 230 (1907) (enjoining the defendant from emitting sulfur dioxide that was destroying forests, orchards, and corps in Georgia).

[154] UNFCC, *supra* note 82, at art. 3(1).

[155] *Id.* at art. 4(8).

[156] *See* Elisabeth Rosenthal, *Biggest Obstacle to Global Climate Deal May Be How to Pay for It*, N.Y. TIMES, Oct. 14, 2009, at A6.

[157] *See* Bob Sercome & Anthony Albanese, *Our Drowning Neighbors*, 4 (2006) http://www.climatecampaign.info/documents/Our_Drowning_Neighbours.pdf.

[158] The nations who were part of the convention and agreed to its terms are Argentina, Bolivia, Brazil, Chile, Columbia, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, Venezuela, and the United States.

[159] Seventh International Conference of American States, Montevideo Convention on Rights and Duties of States art. 1, Dec. 26, 1933, 3802 L.N.T.S. 10.

[160] *Id.* at art. 5.

[161] *Id.* at art. 11.

[162] *See, e.g.,* Bangladesh Bureau of Statistics, Statistical Pocket Book, 2008; Bangladesh Bureau of Statistics, Area, Population and Literacy Rates by Paurashava, 2001.

[163] *About Wyoming*, http://www.wyoming.gov/general.aspx (last visited Oct. 4, 2010).

[164] C.I.A. Maldives, *supra* note 58.

[165] *See* 16 U.S.C. §§ 1531–44 (2008).

[166] *Id.* at § 1536(e). The "god squad" is comprised of the Secretary of Agriculture, Secretary of the Army, Chairman of the Council of Economic Advisors, Administrator of the Environmental Protection Agency, Secretary of Labor, Administrator of the National Oceanic and Atmospheric Administration, and the President. *Id.* at § 1536(e)(3).

[167] *Id.* at § 1536(2).

[168] UNFCCC, *Draft Report on the Conference of the Parties on its fifteenth session* 7, available at http://unfccc.int/resource/docs/2009/cop15/eng/l01.pdf.