

A Buddhist Perspective on Global Warming: Causes, Effects and Solutions

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ABSTRACT

Among all religions today, Buddhism is widely recognized as the most scientific one. This paper will analyze global warming from a Buddhist perspective. First, global warming is basically caused by three poisons: greed, anger, and ignorance. Greed causes us to consume carelessly our limited natural resources, from energy companies that want to maximize their profits by building more coal-fired power plants that emit millions tons of carbon dioxide (CO₂) to nations that want economic development at the expense of the environment. Anger comes in the form of aversion to conservation and sustainable practices. Ignorance causes us to think the permanence of all things and to ignore the serious effects of global warming, from severe storms and floods in recent years to submerged coastal areas due to sea level rise in the near future.

Global warming can also be studied by applying basic Buddhist teachings: the middle way, the Eightfold Noble Path and the principle of dependent origination. Due to the three poisons, a person may adopt extreme positions, (1) he/she is not responsible for global warming or (2) he/she cannot do anything about it. We should dwell neither in denial nor hopelessness, but should adopt a middle way and a pro-active approach. We should fully understand the causes and effects of global warming (right understanding) through our best efforts (right concentration), intentions (right intent) and wisdom (right view). We should investigate the wasteful habits and practices in our own life (right livelihood) and then apply the best solutions (right effort) and care for others and all forms of life on this planet (right mindfulness). Finally, we have to realize that we live in an interdependent world where anyone's actions, however small, will affect everybody else and the planet as a whole.

Practical solutions to global warming will be described. These include steps that an individual, a private business and a government can take to minimize the effects of global warming, ranging from energy conservation measures to alternative renewable energy sources such as biofuels, wind and solar, and sustainable development policies. For the last several years, members of Tuệ Quang Foundation together with international environmental defense organizations have mounted legal challenges to stop the building of coal-fired power plants in several states throughout the United States. These efforts and our program to grow environment-friendly plants in Vietnam, e.g. the Moringa plant for fighting malnutrition and the Jatropha plant for producing biodiesel will also be discussed.

INTRODUCTION

In recent years there is increasingly firm evidence that global warming is really occurring and is causing extreme climatic changes and enormous losses, both in human life and property. These adverse effects are not confined to a particular country or region but are happening throughout the whole world. For several weeks in early 2008, south China and northern Vietnam have suffered freezing temperatures that are the lowest on record. In recent years, several strong typhoons have struck the coastal areas of Vietnam and have caused large losses of life and economic damages. In 2004, three big hurricanes have hit the Florida coast and the city of New Orleans was completely devastated by Hurricane Katrina. Due to the record high temperature during the 2003 summer, over 20,000 people have lost their life in France and other parts of Europe.

Global warming has been characterized as the most dangerous threat today, and its effects are far more severe than those of terror and AID/HIV since it threatens the survival of the human race, our ecosystem and Planet Earth itself. Global warming is a scientific phenomenon on a global scale and, thus, it is appropriate to study its causes, effects and solutions by applying the basic teachings of Buddhism which is recognized, among all regions today, as the religion closest to modern science.

ABOUT GLOBAL WARMING

Global warming is the term used to describe a gradual increase in the average temperature of the Earth's atmosphere and its oceans, a change that is believed to be permanently changing the Earth's climate forever. The average temperature of the Earth has risen between 0.4 and 0.8 °C over the past 100 years. Carbon dioxide (CO₂) and other greenhouse gases such as methane (CH₄) are released by the burning of fossil fuels, land clearing and other human activities. Increased concentrations of these gases are believed to be the primary sources of the global warming that has occurred over the past 50 years. The United Nations Intergovernmental Panel on Climate Change (IPCC) have released in 2007 reports on the causes and effects of global warming research. The IPCC is composed of experts from 130 countries and these scientists have recently predicted that average global temperatures could increase, under the best estimates, between 3.1 to 7.2 degrees Fahrenheit (1.8 to 4.0 degrees Celsius) by the end of the century (year 2100). Severe consequences -- from rising seas, droughts, severe storms, weather extremes, species extinction and other effects -- will occur without sharp cutbacks in emissions of the industrial, transportation and agricultural gases blamed for global warming. To avoid the worst, the IPCC has recommended that greenhouse gas emissions should be reduced by 25 percent to 40 percent below 1990 levels by 2020, and by at least half by 2050. The IPCC and Al Gore have been awarded in December 2007 the Nobel Peace prize "for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change".

CAUSES AND EFFECTS OR KARMIC RETRIBUTION

As shown above, the primary cause of global warming is the greenhouse gases emitted by the burning of fossil fuels, primarily coal, oil and natural gas. Fossil fuels are currently the primary sources of energy in the world today, electricity from coal-fired power plants, gasoline for automobiles and gas for cooking or heating our homes. All these energy sources are in limited and dwindling supplies, especially oil has been predicted to run out within the next 30-50 years. Still, the world is consuming them daily in greater amounts, especially in Western countries that encourage their consumption and waste. With less than 5% of the world population, yet the US consumes more than 25% of the world energy. In recent years, large and fuel-inefficient sports utility vehicles (SUV) have become popular in the US. A SUV has a typical mileage of 13 mpg (5.5 km/liter); driving this SUV for a year has been estimated to consume more energy than using a color TV for 28 years! With the recent high price of oil, oil companies are reaping record profits (over \$120 billion USD in 2007)! Moreover, power companies in countries with large coal resources such as China and the US have plans to build several new coal-fired power plants. At the present time, there are over 150 new coal plants being built or planned in the US and over 550 plants in China. With the approval of the current US government, power companies want to complete their construction within the next few years so that they can avoid the costs of installing equipment for CO₂ capture and sequestration.

Thus, greed is the fundamental cause of global warming. It is also caused by two other poisons: anger, and ignorance. Anger comes in the form of aversion to conservation and sustainable practices. Ignorance causes us to think the permanence of all things and to ignore the serious effects of global warming, from severe storms and floods in recent years to submerged coastal areas due to sea level rise in the near future. Under the influence of Christian evangelicals and big polluters such oil and power companies, the current US government has adopted misguided policies, like weakening the environmental laws, ignoring the causes and effects of global warming by calling for more studies instead of taking action. The existing US government has not ratified the Kyoto Protocol even if it is the most developed nation and the second largest emitter of greenhouse gases behind China (about 6 billion MT and 20% of the world totals in 2006). It is hoped that the next US administration starting in January 2009 will have more ‘enlightened’ policies towards global warming.

MIDDLE WAY AND PRO-ACTIVE SOLUTIONS

Global warming can also be studied by applying other basic Buddhist teachings: the Middle Way, the Eightfold Noble Path and the principle of dependent origination. Due to the three poisons, a person may adopt extreme positions, (1) he/she is not responsible for global warming or (2) he/she cannot do anything about it. We should

dwell neither in denial nor hopelessness, but should adopt a middle way and a pro-active approach. We should fully understand the causes and effects of global warming (right understanding) through our best efforts (right concentration), intentions (right intent) and wisdom (right view). We should investigate the wasteful habits and practices in our own life (right livelihood) and then apply the best solutions (right effort) and care for others and all forms of life on this planet (right mindfulness). Finally, we have to realize that we live in an interdependent world where anyone's actions, however small, will affect everybody else and the planet as a whole.

Pro-active solutions that an individual, a private business and a government can take to minimize the effects of global warming are readily available. For an individual, they include simple measures such as replacing incandescent light bulbs with compact fluorescent bulbs, plant shading trees around the house for absorbing CO₂ and cooling effects, drive less, use public transportation more, ride a bicycle or walk whenever possible, recycle newspapers and other materials. Eating less meat or becoming a vegetarian not only prevents killing animals but also reduces CO₂ from raising cattle and other farm animals. These simple measures are not only environment-friendly but also good money savers. They only require a minimal change in the existing lifestyle and are consistent with a simple and frugal lifestyle recommended by the Buddha.

Similar to individuals, there are practical measures that a business can take to be a good corporate citizen, saving itself monies while helping the environment. Given the high prices of energy, it makes good sense for every business to review its energy uses and improve their efficiency whenever possible. Old factories that use outdated technologies should be replaced with new ones that are more energy efficient and, hence, more profitable in the long run.

Even power companies should consider new technologies in their design of coal-fired power plants, such as integrated gas combined cycle (IGCC). Although IGCC costs slightly higher (about 10%) than conventional boilers, CO₂ emissions from an IGCC plant are lower and cheaper to be captured and sequestered than those from a traditional plant. A "good benefit" of recent high oil prices is to make the costs of other alternative energy sources more competitive. In addition, the construction costs of a coal-fired power plant have been increased rapidly. Thus, it will be in the interests of power companies to consider alternative renewable energy sources such as wind, solar and biofuels.

Governments can play a major and beneficial role in fighting global warming. Policies of "enlightened" leaders must be environment-friendly and for sustainable development. Forest deforestation should be strongly forbidden. Clean coal technologies and renewable energies should be encouraged through research funding and economic incentives. It has been estimated that replacing in China some old coal-fired power plants, that do not have any emissions control, can reduce significantly its emissions of greenhouse gases. China has recently surpassed the US as the largest CO₂ emitter in the world and, thus, it will need to reduce its emissions.

The government should also take measures to reduce emissions of greenhouse gases from the transportation sector, such as building mass transit, encouraging their use, raising vehicular mileage and sponsoring the development of vehicles using alternative fuels (electric, hybrid, hydrogen fuel cells). All the above measures will allow for a sustainable economic development while enhancing the people health and welfare. They will also enhance the national security through the reduction of imported oil and energy uses in general.

OUR OWN HUMBLE EFFORTS

For the last several years, members of Tuệ Quang Wisdom Light Foundation have contributed to the fight against global warming both in the US and in Vietnam. There are over 150 new coal-fired power plants under construction or in planning in the US. Power companies want to build them within the next few years so that they can avoid the costs of installing equipment for CO₂ capture and sequestration. Currently, CO₂ is not a regulated pollutant like nitrogen oxides (NO_x) or sulfur dioxide (SO₂) for which best available control technologies (BACT) are required. The US Congress is considering legislation for CO₂ control and new regulations are expected in the next few years. The new power plants are frequently opposed by the local population since they offer a few economic benefits yet they will cause high pollution levels and health risks over 50 years, the expected plant life. With the support of the local people, environmental defense organizations such as Sierra Club and Natural Resources Defense Council have mounted legal challenges to these new power plants. With over 30 years of professional experience, Khanh Tran of Tuệ Quang Wisdom Light Foundation has served as an expert witness in air quality impact analysis in these legal proceedings. He is in charge of reviewing the air quality impact analysis, identifying its shortcomings and challenging its validity. These legal challenges have been filed against several power plants in various states. It is hoped that they can force the power companies to abandon their plan or modify it to minimize the environmental effects.

Vietnam does not emit a significant amount of greenhouse gases, yet it is already suffering severe consequences of global warming. With the sea level rise expected in the next 100 years, the country may lose significant portions of agricultural lands in the Red River and Mekong deltas, Vietnam's main rice baskets and several coastal cities may be underwater. In recent years, several strong typhoons have struck the coastal areas with large losses of life and property. In 2006, Typhoon Durian caused widespread damages in the southern provinces, a region rarely reached by tropical storms. Other climatic extremes include the recent deep freeze in early 2008. Since 2001, we have provided free weather forecasts for all major cities and towns in Vietnam, Cambodia and Laos via our website <http://www.vnbaolut.com>. They are updated every six hours, and are valid for 72 hours in advance. Our website also provides storm forecasts from international organizations such as US Navy, Hong Kong, Japan, Taiwan and Philippines. For emergency planning against climatic extremes such as the recent deep freeze, we have also provided a 15-day forecast.

Recently, we have also begun efforts to promote the growing of environment-friendly plants in Vietnam, e.g. the Moringa plant for fighting malnutrition and the Jatropha plant for producing biodiesel. These plants are fast growing, can be grown in poor soil and can survive long periods of drought. Laboratory analyses have revealed that the Moringa leaves and flowers have high nutritional values and good medicinal properties. The process for producing biodiesel from Jatropha seeds is quite simple, and Jatropha has been shown to yield more biodiesel than other food sources such as corn, peanuts, sugarcane and coconut. Jatropha can also give its growers an additional source of income.

CONCLUSIONS

The causes, effects and solutions of global warming have been examined through the basic teachings of Buddhism. It is clear that Buddhism has a lot to offer in understanding it and promoting pro-active solutions. Global warming is a global-scale phenomenon and its solutions have to be global as well to be effective. It will require the participation and contributions of all “enlightened” individuals, business and governments from the whole world. One is all and all is one! We should act now because time is running out! May the Buddhas in ten directions protect all sentient beings against global warming!

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