

A Sustainable Environment: Our Obligation to Protect God's Gift

by
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How Are Bio-Fuels Impacting the Environment?

About two years ago, I wrote an article titled "Are Bio-Fuels the Answer to Our Energy Problem?" Some of the conclusions of that article were that it takes more energy to produce ethanol from corn than the energy produced and there are other more efficient forms of bio-mass for producing ethanol. Despite these conclusions, the planned production of corn-based ethanol continues to increase – thanks to government subsidies. However, we need to ask how this increase in ethanol production is impacting the environment and food production.

With the increase in demand for ethanol coupled with the government subsidies, farmers are planting more corn than ever. In President Bush's 2007 Energy Act, he mandated the use of 36 billion gallons of bio-fuel, up from 4.7 billion gallons in 2007. Fortunately, only 15 billion gallons can be derived from corn. However, this tripling of corn production for ethanol has encouraged farmers to divert more corn production away from food consumption as well as diverting agricultural land away from other crops to corn. But this trend is not limited to the U.S. Countries like Indonesia and Malaysia are destroying forests to grow palm oil, another source for the manufacturing of bio-fuels.

One expected result of the increase in demand for crops is substantial increases in food prices. Corn was selling for about \$2.20 per bushel in early 2006 and now, two years later, is selling for over \$4.00 per bushel. The world price for wheat doubled between May and September of 2007. Not only are Americans paying more for food, but people all over the world are seeing these increases. And the people that are getting hurt the most are in the developing countries. According to the World Bank, 3 billion people live in rural areas in developing countries and 2.5 billion of these are involved in farming. This 3 billion people includes three-quarters of the world's poorest people. Despite prices for crops, these people really lose because of the higher cost of food bills. Last month, you may read about riots in Haiti caused by raising food prices. This is one of the poorest countries in the Western Hemisphere where 80% of the people earn less than \$2.00 per day.

One of the alleged benefits of ethanol as a bio-fuel is that it burns cleaner and releases less carbon dioxide to the atmosphere, thus reducing automobiles' impact on global warming. I say "alleged" because it is really not the case. The fossil fuels required to raise and harvest corn and produce ethanol are responsible for large amounts of carbon dioxide. The synthetic nitrogen fertilizer is derived from natural gas and these fertilizers release enormous quantities of nitrous oxide, a greenhouse gas that is 310 times more potent than carbon dioxide in its impact on global warming.

Another problem is the clearing of land to produce these crops for bio-fuel. For example, according to a University of Minnesota study, 27% of new concessions for palm-oil plantations in Indonesia lie on peat lands which are very rich in carbon, built up over many years. As a result, the study found “converting peat lands in Indonesia into palm oil plantations ran up a carbon debt that would take 423 years to pay off”. This is the difference between the release of carbon from the peat lands compared to the savings in less carbon released from the bio-fuel compared to gasoline. In Brazil, some of the rain forest is being cleared to make room for growing more crops. Just imagine the major reduction in carbon sequestration between the forests and any crops grown on the same land. A study recently reported in *Science* concluded that when deforestation is taken into account, corn ethanol and soy bio-diesel produce about twice the emissions of gasoline.

All three of the presidential candidates have been promoting ethanol, but this is not the answer to our energy or global warming problem. There is a finite amount of agricultural land and the population that needs to be fed from that land is growing. So why are we using the land for fuel production when there are alternatives. Much more effective than producing ethanol to supplement the shortage of gasoline is to manufacture more fuel efficient automobiles and to have people drive less – get used to using public transportation whenever possible.