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Reflection Paper: Environmental Project

The problems we face are based in part on the large disparities in the standards of living experienced in different parts of the world. We who live in the United States enjoy an abundance of what the world has to offer. We are collectively the wealthiest people who have ever existed, with the highest standard of living (shared with a few other rich countries). Because the United States, with less than 5% of the world's people, controls approximately 25% of the world's economy, it is obvious that we depend on many other nations for our prosperity. In our actions we often seem to miss this relationship and to underestimate our effects on the environment that supports us.

There are several environmental issues that are primarily concern of our generation. Global warming, increasing levels of CO2, dependence agriculture on pesticides and nitrogen, industrial pollution, human's dependence on agricultural sector and unwillingness to take the responsibility for our own actions are just a few issues that were brought up by Clifton Middleton in his work the "Hard Seed".

Agriculture is the sector that uses the most pesticides worldwide—approximately 85% of the estimated 2.6 million metric tons (2.9 million tons) used each year. Highly developed countries use about three-fourths of all pesticides, but pesticide use is increasing most rapidly in developing countries.

Pesticides cause environmental and health problems and it appears that in many cases their harmful effects outweigh their benefits. Pesticides rarely affect the pest species alone, and the balance of nature, such as predator–prey relationships, is upset. Certain pesticides concentrate at higher levels of the food chain. Humans who apply and work with pesticides may be at risk for pesticide poisoning (short term) and cancer (long term), and people who eat traces of pesticide on food are concerned about the long-term effects.

According to the EPA, agriculture is the leading source of water quality impairment of surface waters nationwide: 72% of the water pollution in rivers is attributed to

agriculture. Agricultural practices produce several types of pollutants that contribute to nonpoint source pollution. Fertilizer runoff causes water enrichment. Chemical pesticides used in agriculture may leach into the soil and from there into water. These chemicals are highly toxic and adversely affect human health as well as the health of aquatic organisms. The National Water Quality Assessment Program, an ongoing study of pesticides and their degradation products, indicates that pesticides are widespread in U.S. rivers, streams, and groundwater. Many water samples contained a mixture of pesticides. Soil erosion from fields and rangelands causes sediment pollution in waterways. In addition, some agricultural chemicals that are not very soluble in water, such as certain pesticides, find their way into waterways by adhering to sediment particles. Thus, soil conservation methods both conserve soil and reduce water pollution.

The level of CO2 has been steadily rising for the last 15,000 years, and the current concentrations are higher than at any time in the last 400,000 years. Carbon dioxide levels in the atmosphere have risen 30 percent in the last century and it keeps rising. There are several reasons that raise the level of CO2, but human impact in the environment still influences the most. Growth of human population demands nations to produce more food, use more energy. Energy demand in the Third World grows at 3.5 percent a year. The USA along had 128 million vehicles in 2000, they were driven 2.3 trillion miles, consuming 8.2 million barrels of fuel per day and emitting 302 million tons of carbon. Now we are facing another problem: between 1950 and 1996 the vehicle population outside the US grew almost four times faster then the human population.

Humanity’s impact has increased by half in less than 40 years. The planet would require a year and three month to renew the resources used by humanity in a single year.

The consequences of accelerating the level of CO2 are melting polar ice, damage to forests, etc. There is another consequence that most of the people are not aware of: complex factors involved in climate change (such as global warming) can also lead to a dramatic cooling effects.

Fixed nitrogen is the basic component of fertilizer. Through its dependence on artificial fertilizer, modern conventional agriculture has become a form of industrial nitrogen management. Because of its availability and low price, fertilizer is often very inefficiently applied; much of it never reaches the crop. It leaches out of the fields and

into the streams, or it's converted into a nitrogenous gas like oxide and escapes into the atmosphere.

Like sewage, "Concentrated animal feeding operations" or CAFOs pollution is extremely high in nitrogen, and most of that nitrogen comes from artificial fertilizer used to grow the animal feed. When farmers use artificial fertilizer they don't need manure. The basic input is no longer produced by the landscape in which it is used, so the local ecology no longer effectively limits the intensity of production. The waste cannot be simply accumulated in lagoons, since lagoon space is limited, so CAFOs require huge amounts of "spreadable acreage" – cropland on nearby farms where manure can be spread, sprayed, or injected. But crops can only use so much of nitrogen. Adding too much can actually reduce yields; plants can overeat, and excessive nitrogen uptake tends to interfere with a plant's ability to manufacture the various chemicals needed for its metabolism. Too much nitrogen can also throw the soil community out of balance by favoring only those organisms that thrive in high-nitrogen conditions, at expense of many other organisms.

High concentration of nitrogen level leads to water pollution as well. Nitrate contamination of groundwater can create serious risk for public health. High nitrate levels in wells near feedlot operations have been linked to greater risk of miscarriage.

The most obvious form of ecological disruption involves algae blooms, explosive growth of algae and cyanobacteria that can suffocate many other aquatic organisms.

Some effects of nitrogen pollution are much more subtle than algae blooms, but arguably even more dangerous. The nitrogen oxides produced through fossil fuel combustion are a major component of the acid rain that is attacking soil and fresh water. Water that become increasingly acidic support fewer form of aquatic life. The same with soil, the acidification of soils tends to impoverish the soil community. The acid also causes certain minerals to leach out of soil.

Stabilizing the nitrogen cycle is likely to be just as demanding a task as is stabilizing carbon cycle. Three basic reforms appear to be necessary if we are to achieve major reductions of our fixed nitrogen emissions. First, we need to convert the dominant mode of agricultural production from its current, "high input" paradigm to one that emphasizes organic production. Second, we will need to convert our fossil fuel-based economy to one

based on alternative/renewable sources of energy. And third, we will need to slow and eventually reverse the destruction of the planet's remaining natural areas, especially its remaining forests.

Rising level of CO2 is a complicated problem which causes much more serious consequences than just "greenhouse effect". It is interrelated with such aspects of life as ecology, economics, politics, business, social life, ethics and personal values. To stop global warming humanity needs to act now. It will take a dramatic change in people's behavior and habits, but it is possible. For example, people would have to stop driving SUVs and use public transportation, or hybrid cars, industrial companies and power plants would have to abandon coal as a fuel, governments would have to accept new laws focusing on environmental protection and use of alternative sources of energy. Small things like recycling and turning off an air conditioner/heater when you are not home make a big change for our environment. Legal issues and law-making problems are discussed in the article the "Legal Conditions for Earth Survival". It is not a secret that our law makers cannot care less for the environment, the slogan "Go Green" takes a different meaning when it comes to making laws for corporations. Instead of protecting our habitat, all that matters now are the profits corporations will be bringing. Our capitalistic mentality – to make as much money as possible no matter what - is the key to the failure of all the actions that had been taking. The most important change should be done is in people's mentality: to change our attitude and open our mind for preserving and maintaining nature, not destroying it. We need to take responsibilities and see a bigger picture of how our small actions lead to global problems. Any long-term improvement in the condition of the world must start with individuals—our values, attitudes, and practices. Each of us makes a difference, and it is ultimately our collective activities that make the world what it is.

Future predictions look very pessimistic according to some scientists, some still have a hope. The truth is, even if nearly all greenhouse gas emissions are phased out by 2100 (which is almost impossible), then global temperatures will still continue to increase for another 300 to 500 years and negative consequences will continue for centuries.

Our capacity to understand the effects of our interference is growing rapidly. Progress on the global level will depend on our ability to reinvent our relationships to the local level – to the particular ecosystems and societies in which we are actually live.

We all love, care and wish a better future for our children. The question is will they have this future or their children see this future? How much longer will it take us to realize that we are already at the edge of an ecological catastrophe and the worldwide actions should be taken now?