

Mitigation Strategies and Solutions: Executive Summary

Governments' capacity to feed the citizens is constantly decreasing, especially in the industrialized countries, which causes richer countries to lease land in poorer countries, such as Africa, to grow food to feed their citizens. Unfortunately, the above-mentioned African land has not been spared by environmental pollution and the large amount of foreign food production is being conducted at the expense of the already depleted natural resources. Scrambling for many lands by the upcoming economies is just adding salt to the injury, since the concern for the land is a major contributor to the world's devastating situation.

Global environmental situation has deteriorated over the time in all aspects including air, water, land, and noise pollution caused by railway, aircrafts and other traffic, as well as manufacturing industry, etc. Technological and civil development has seen the increase of all kind of pollution. People could have an effect on the environment as time went by, but it is clear from history that human entrance into the Iron Age was the beginning of the environmental pollution even at an insignificant level. Increased usage of water and fire increased the rate of pollution, especially air contamination. It was, however, not until the World War II that the pollution really became a topical issue.

Introduction

Due to the depletion of natural forests, water catchment areas have been severely affected. In the most complicated cases, countries have resorted to non-conventional water resources, like cloud seeding, in order to cause some rainfall. Water harvesting has become a common practice in many countries, and the procedure of irrigation has now been changed into drip irrigation in order to minimize water wastage during the exercise. Increase of industrialization has over the time made the situation

even worse, causing extreme water scarcity. The lack of water occurred because a lot of water is used in manufacturing plants, which not only reduces water levels, but also pollutes water, since the water used for irrigating plants is dumped into clean water sources, like rivers, etc. Air pollution has not only increased respiratory and cardiovascular diseases, but has also affected the climatic conditions, which, in turn, has affected the rainfall levels, according to Gary (2004). The increase in population has also affected the environment in a negative way.

Due to the increased food demand production, deforestation has been spreading rapidly over the entire planet. However, scramble for African land has worsened the situation, since developed countries are leasing large pieces of land for production of cash crops in already infertile lands. Many world leaders have warned governments against deforestation for short term economic gains, noting that the environment can survive without human beings, but humankind would not survive without the environment. Deforestation is blamed not only of water scarcity, but of a lot of other problems. It is said that deforestation is the main cause of greenhouse effect, extinction of both animal and plant species and, above all, depletion of medicine sources (Wetherald, 2002).

Another thing that currently proves to be a major problem is the issue of energy. Renewable sources of energy, for example, water, biomass geothermal wind, solar energy, etc. are said to be quite abundant, yet limited because, sooner or later, these sources are going to be depleted. For example, people can no longer depend on water as a source of energy due to its shortages; even though renewable resources are said to be less pollutant, the humankind must come up with new ways of retrieving energy (Gary, 2004).

Non-living factors that contribute to the contamination of the environment or are affected by mitigation strategies include emissions of acidic fumes from incinerators and landfills released into the air; both are gradually resulting to global warming, according to Maslin (2004). In addition, water conservation technology, like constructions of dams, contributes to exploitation of water levels, since dams change the size of the river, reducing river flows. As a result, the whole riverine ecosystem is affected. Plants and animals that were depending on the rivers begin to suffer and die out. Earthquakes and floods, which are considered to be natural phenomena, also contribute to the changes in the ecosystem and are affected by mitigation strategies. Living factors also influence or are affected by mitigations strategies. Humankind is the factor that affects the nature the most with human activities, such as industrialization, which considerably contributes to pollution, causing the elimination of a number of species (Stevens, 1993).

Recycling is one of the ways that helps mending areas changed by pollution. Recycling is meant to restore the already used material into a form that can be used once again, even though the end material is of worse quality. Recycling helps reduce the pollution, since the waste material will not be burned and, thus, will reduce remanufacturing energy. Again, recycling reduces the use of virgin resources. For example, while there is always a requirement to use clean water during surgery operations, the water does not have to be sanitary for all processes. Therefore, the water used, say, in domestic cleaning can be recycled and then reused for other purposes. However, some materials, especially bio-degradable wastes, are not necessarily recycled. On the other hand, bio-degradable materials are not harmful for the environment. However, the salvage aspect of recycling saves the environment from a great deal of pollution. Recycling non-biodegradable substances like aluminum has proved to save more than 90% of energy and prevent considerable air pollution.

Recycling is also known to be a major factor influencing the improvement of the country's economic state. Apart from saving on waste materials, the recycling companies founded have offered a pool of job opportunities for the citizens, contributing to the economical stability within the country.

There are other benefits of recycling that are not necessarily economical. These are purely environmental benefits, mostly overlooked by indirectly affected governments and companies. The above-mentioned benefits include reducing air pollution, cost of energy, waste material, hazardous effect as a result of waster burning, etc. However, these benefits are made solely for the community sake; unless there are incentives, like tax cuts and subsidies, manufacturing companies are likely to ignore them. There are, however, challenges even for the economically viable options. First of all, for any recycling manufacturing plant to be established, there must be enough supply of recyclates, means of getting the recyclates without having to invest heavily on the same, and, of course, a market for the recycled products (Stevens, 1993).

There are mainly two approaches on how to deal with recycling industries. One is establishing a government-owned company which is required to support societal beneficiary recycling; the other is a laissez-faire approach which presupposes that private companies venture into the business for profit-making. In addition, there are laws that governments put in place to ensure that recycling companies will not end up as white-elephant structures. The methods mentioned above include defining more clearly what is disposable and what is not. It is illegal in some states to dispose either biodegradable waste, such as garden waste, or non-biodegradable materials like aluminum. Another way requires introducing a prize mechanism, which helps one get the value for his money only when (s)he has returned the non-consumable material to create, for instance, a packaging material (Global Warming International Centre, 2005).

Recommendations and Conclusion

However, recycling is not a perfect solution for mitigation strategy, since the former is not necessarily cheaper or less pollutant. As a matter of fact, recycling some materials proves to be more expensive than manufacturing these from raw materials. There are costs of collection, for example, cleaning and transportation of waste materials that sometimes supersedes the cost of manufacturing from original raw materials. Moreover, some form of recycling creates more complex materials that eventually become hazardous for the nature and the humankind, as U.S. Environment Protection Agency (2007) marks.

Some companies and countries are also known to engage in health hazard practices in the name of recycling at the expense of unsuspecting employees. Since a lot of waste materials are found in packaging, there have been cases when countries imported more waste products than the useful ones. The gap between the production and the recycling has, in turn, increased the cost of recycling, especially in cases when the demand of recycled products exceeds the quantity of the recyclates. Since pollution has many underlying effects on the citizens, the first mitigation strategy that would be viable would be not only educating the citizenry on the effects of pollution, but also teaching them how to prevent pollution of any kind. For example, it would be important for a largely populated country to control its birth rates because of the effect large families have on pollution. The main challenge of the above-mentioned approach is to have the public implement the planned strategy; however, that can be overcome by an introduction of either rules or incentives to the law-abiding citizens, according to what Global Warming International Centre (2005) says.

Another strategy would be to have policies that are environmentally friendly, though this is likely to lie more heavily on governments and company's side. For

example, the developed countries should consider their foreign policies and support underdeveloped countries improve their already depleted natural resources, instead of running there to grow cash crops at the expense of the environment. The same developed countries should oblige to environmental rules and laws that will protect global climatic conditions. Locally, the governments should ensure that their citizens are abiding by environmental rules that will either protect or conserve the environment. Apart from just protective policies, governments should be willing to support and invest in environmental friendly technology conservative projects (Gary, 2004).

In addition, governments and/or environmental activists are expected to invest largely into environment-friendly technologies. For example, water harvesting equipment will be required to make sure that there is no wastage on the ever-reducing rain water. There should also be the introduction of water/energy conservation technology, for example, drip irrigation and usage of renewable resources as sources of energy. Governments should also support recycling of waste materials, which helps save virgin resources and reduce the cost of pollution challenges as a result of waste and landfills burning.

The usage of renewable resources, such as solar energy, instead of electricity and natural oils will also play a significant part in enhancing mitigation strategies. Consumer behavior can also help a lot, especially in energy conservation. Switching off all energy ports in the house and offices will also help in energy conservation. It is also useful to unplug all power connections that are not in use, since they continue to consume electricity as long as they are plugged. Walking and taking public busses instead of using one's own car is also a consumer behavior that can prevent a lot of pollution and conserve a lot of energy (Wetherald, 2002).

Waste minimization, which is the process of reducing waste product during production, especially in manufacturing plants, is another way of enhancing mitigation strategy. Waste minimization helps to conserve production energy, since in the given strategy, the only useful material is processed and, consequently, the environmental pollution is minimized. Moreover, waste minimization has led to the development of innovative and commercially successful replacement products. Waste minimization is achieved by resource management, which ensures that all raw materials can be used by various industries in the process of recycling. The latter helps to make sure that only usable raw material is brought to the manufacturing plant or the business place.

Environmental protection is something that will always remain important, which is why the current generation would like to provide safe life for the generations to come. Therefore, various laws should provide the societies governing the efforts of conserving the environment at large with the sufficient means to save the nature from pollution.

References

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