Acid precipitation acid rains research paper example

Environment, Pollution

Acid rains have been in the mid of attentions since the Rio Earth Summit. This is an example where anthropogenic impact combines with the nature forces. “ Acid rain” is a broad term referring to a mixture of wet and dry deposition (deposited material) from the atmosphere containing higher than normal amounts of nitric and sulfuric acids” (What is Acid Rain?). Originating from the large number of causes acid rain “ is created when sulfur dioxide and nitrogen oxides are discharged from industrial plants that burn fossil fuels like coal, oil, and natural gas. These compounds react with water, oxygen, and other atmospheric compounds to form acid rain” (Nonpoint Source Pollution: Atmospheric Inputs). The sources of such a phenomenon can be both natural and man-made. The natural sources include volcanoes eruption or decaying vegetation, while anthropogenic ones are fossil fuel combustion, industrial emissions and so on. Acid precipitation is nonpoint source of pollution. It is difficult to determine any discernible, confined and discrete source from which pollutants are or may be discharged.

Acid precipitation is not limited to rains alone. It can occur in the form of fog, snow, any dry material or tiny bits that reach the Earth. Harmful chemicals contained in the acid rains cannot burn human’s skin. There is no direct and immediate effect on their health if a person swims in the polluted lake. However, acid rains have a number of indirect effects. The sulfur dioxide can cause health problems like asthma and bronchitis. The nitrogen oxides create ground-level ozone. While everybody is concerned with the problem of preservation with ozone layer that is high above, the ground-level ozone can lead to severe lungs problems (Boumis). Apart from such terrible impact on human health, acid precipitation has many effects on ecosystem. The

most negative impact it causes falls to streams, lakes, wetlands and any other aquatic environments. When the sulfur dioxide together with nitrogen oxides gets into the water, it becomes acidic and leads to further chemical reactions such as aluminum absorption. The water becomes unfit and toxic for fish and any other aquatic animals. Despite the fact that some species are more resistant to water pollution, acid rains still invoke dramatic changes in the food chain. This, in turn, impacts non-aquatic species as well. “ Acid rain also damages forests, especially those in the higher elevations” (Acid Rain: Effects Felt through the Food Chain). Acids robs the soil of its natural nutrients and releases aluminum, what makes it difficult for trees to take up water. Moreover, leaves and needles of trees are also damaged by the acids.

It is clear that such environmental problem needs prompt and decisive action from governments of literally all countries. For example, in 1990 the U. S. government adopted the Clean Air Act Amendments that became the code of requirements for the control of acid precipitation. It started the Acid Rain Program that introduced limitations on the amount of the sulfur dioxide emissions and nitrogen oxides emissions from the power plants that can be released. Some of the plants are offered the allowances from the government aimed at reducing the chemical emissions (Acid Rain Students Site: What Is Being Done?). The Program offers “ flue-gas desulfurization technology, known in lay terms as scrubbers – to remove SO2 before it left smokestacks” (Larson, 2010). It proved to be quite effective because nowadays in China, where the acid rains problem received little attention compared to other environmental challenges, the government is thinking

about making such kind of technology required for power plants as well. The adopted legal acts and the implemented new technologies are really helpful in the battle against acid rains. Such measures prevent an increase in harmful chemical emissions due to the production growth. However, there are still some steps that could be made in order to make our environment more friendly and safe. Fuel can be “ washed” that diminishes the amount of sulfur in it. People can use renewable energy sources; cleaner cars may become a subject of mass production (Acid Rain Students Site: What Is Being Done?).

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