CLIMATE CHANGE – GLOBAL WARMING

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Everyone knows that the population of the Earth have many problems, but the most serious problems are ecological. And today we'll talk about the one of them.

It could be a title of a 21st century horror movie: „Death by Global warming". Instead, it's a real-life warning from ecologists who believe global warming may account for millions of human deaths from disease.

The climate is always changing and has forever been a hot topic of discussion for park-bench philosophers. The climate does its thing and we adopt. It's not like humans can actually control the climate, right?

But this park-bench philosophy has grown up over the last couple hundred years to evolve into the world of meteorological studies, have discovered that we humans are not quite as powerless as we think when it comes to the climate. Human activity has caused the Earth to warm by about one degree Fahrenheit since the late 19th century.

And this one degree has the world up in arms.

The problem, as first identified by the Swedish chemist Svante Arrhenius in 1896, is that human activities, like driving our cars, burning coal to heat our homes and run our factories, chopping down forests to build our cities and produce our paper, and raising cattle to fill our bellies have significantly increased the atmospheric concentrations of key greenhouse gases, namely carbon dioxide, methane and nitrous oxide. This increase in greenhouse gases is thought to enhance the greenhouse effect and lead to global warming.

"Right now the evidence of significant global climate change is minimal, but there are already noticeable increases in human diseases worldwide," said David Pimentel, a professor of ecology and entomology at Cornell University in Ithaca, New York.

The researchers consulted authorities about several issues: morbidity and mortality due to climate change; extreme weather events such as tornadoes, hurricanes and extreme precipitation; air pollution; water- and food-borne diseases; vector- and rodent-borne diseases. Other studies have shown that summer heat waves in urban areas are associated with increased mortality.

Climate change is expected to alter the frequency, timing, intensity and duration of extreme weather events such as tornadoes, hurricanes and extremely heavy rainfall, the researchers note. Direct results of these events are injury or death. Other effects include post-traumatic stress disorder and contamination of drinking water from flooding.

The researchers call for improved climate models "to project trends, if any, in regional extreme events." Such predictions could help communities develop programs to handle weather emergencies.

One area not addressed in the report is the expense involved in averting human health disasters due to climate change. "We can probably adapt to most of these issues, but we do not know how much it will cost us," said Patz.

As you see, there are many factors which influence on changing, and how many problems they bring.

Now the population of Earth must think and try to change its policy of life to more careful attitude to the nature, it'll help to length our life on our Earth.

THE PRACTICAL ACCOUNT OF THE LEVEL OF ENTERPRISE'S ECOLOGICAL SAFETY

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The most interesting thing in every science is the practical side of theoretical topics. That's why I decided to account one of the Economic Safety components – Ecological. As a vivid example I take JSC "Sumykhimprom", that is the main cause of ecological danger in our region.

First of all we should distinguish factors that influence the environment. In our situation it will be accumulation of waste materials, air and water pollution. The level of Ecological Safety of enterprise can be accounted as an average of these factors:

$$L_{ES} = \frac{1}{3}\left(k_m \frac{S_m}{S} + k_w \frac{Z_w}{Z_{mw}} + k_a \frac{Z_a}{Z_{ma}}\right),$$

S – total area occupied by enterprise; S_m – territory occupied by waste materials; Z_w, Z_a – real concentration of polluted substances in the water and air; Z_{mw}, Z_{ma} – marginal concentration of polluted substances in the water and air; k_m – coefficient that reflects the danger level of waste materials; k_w, k_a – coefficient that reflects the danger level of polluted substances in the water and air.

The level of Ecological Safety can be classified:

$L_{ES} = 0$ – absolute ecological safety;

$L_{ES} \leq 0{,}25$ – normal ecological safety;

$0{,}25 < L_{ES} \leq 0{,}50$ – unstable ecological state;

$0{,}50 < L_{ES} \leq 0{,}75$ – dangerous level of ecological safety;

$L_{ES} > 0{,}75$ – ecological crisis.

According to the information that I took from "Sumykhimprom" Ecological department and after some calculations, we have such a result about the dynamic of ecological safety changing in 1998-2001: