DOWN THE WORLD

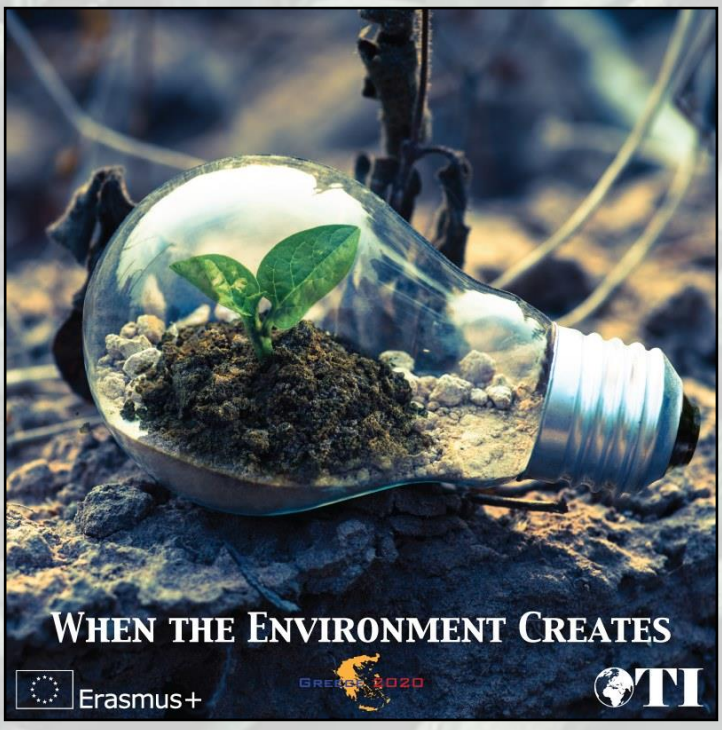
CLIMATE CHANGE

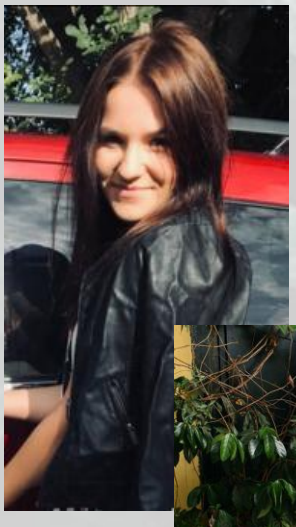
POLLUTION

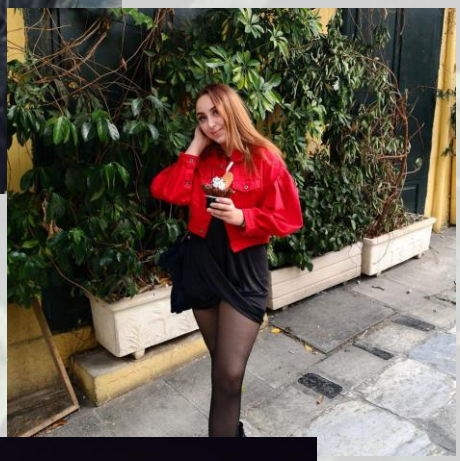
TEMPERATURE INCREASE

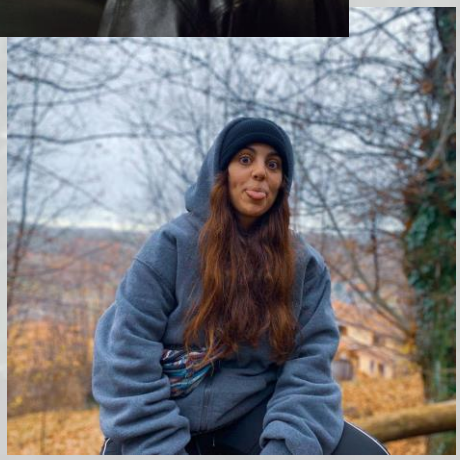
- CONSEQUENCES OF HUMAN ACTIVITY

March, 2020









Welcome!

we are four young people and environmental activists from four different countries - Latvia, Greece, Hungary and Lithuania - in the Erasmus exchange project in Greece, in Kokkino Nero. We are concerned about climate change and the natural damage caused by people. We wanted to tell us about some of these in our journal.

Enjoy reading!

CLIMATE CHANGE

Climate change can be described as the persistent change in the weather pattern engendered by anthropogenic activities. One of the major drivers of climate change is the global warming. Global warming and climate change refer to an increase in average global temperatures. The causes of climate change have been a serious subject of international debates. Humans have some effect on the global climate and heightened human action has contributed to the alteration of the face of the earth.

Global warming has been generally agreed to be caused primarily by the emission of greenhouse gases such as carbon dioxide (CO2), methane (CH4) and nitrous oxide (N2O)), chlorofluorocarbons and other chemicals into the atmosphere. The accumulation of these gases in the atmosphere results in heightened "greenhouse effect" which leads to global warming with local temperature, humidity, wind speed, precipitation, soil moisture and sea level anomalies. It has also been recorded to have led to global cooling in some previous era. On the other hand, an increase in aerosols in the atmosphere, also due to industrial emissions, cools the earth through a reflection of solar radiation back into space.

The greenhouse effect is a natural effect which helps prevent excessive loss of heat from the earth's surface. Without that effect, the earth would have been a lot colder and might have been less habitable for humans, animals and plants. It has been postulated that the earth's surface would have been about 33oC colder than it currently is. However, if the greenhouse effect becomes stronger, then more heat gets trapped than needed, and the earth might again become less habitable

INDUSTRIALIZATION

In the past two centuries, human activities took a different turn towards the use of machines and the mechanization of processes which were erstwhile performed by hand. The result was technological innovations, rapid transformation of economies, territorial expansions, unprecedented population growth, emergence of urban areas, and transformation of the global social system and so on. That was the beginning of the industrial revolution. The industrial revolution began about 1850 in the United Kingdom. This revolution spread throughout western and northern Europe due to the limited amount of arable land and the overwhelming efficiency of mechanized systems. Increased productivity along with boost in incomes characterized the industrialized nations. This accumulation of capital allowed investments to be made in the conception and application of new technologies, enabling the industrialization process to continue to evolve. Systems which burned carbon based fuels – coal, oil and natural gas proliferated leading to further need to prospect for such fuels to power those systems.

Heightened human activities have been shown to have led to increase in global temperatures causing climate change. The human activities in question have been the human's bid to improve its lot by making use of the available and abundant natural resources and processing them into products which will improve the quality of life and standard of living. Incidentally, in doing this humans have altered the balance of nature and triggered off a near calamitous situation on earth.

Human activity has caused an imbalance in the natural cycle of the greenhouse effect and related processes. In addition to the natural fluxes of carbon through the earth system, anthropogenic activities like fossil fuel burning and deforestation, are also releasing carbon dioxide into the atmosphere. Apart from burning fossil fuels, other ways by which humans effectively move carbon dioxide rapidly into the atmosphere include the release of carbon dioxide during blast furnace refining of iron ore and other base metals, and during smelting processes.

During mining of coal, oil refining and when burning these fossil fuels for transportation, heating, cooking, electricity, and manufacturing, more carbon dioxide is released than is being removed naturally through the sedimentation of carbon, ultimately causing atmospheric carbon dioxide concentrations to increase. As we have to eat, we must embark on agriculture. But by clearing forests to support agriculture, we are transferring carbon from living biomass into the atmosphere. Trees sequester carbon dioxide from the atmosphere during the process of photosynthesis to form carbohydrates which are used in plant structure/function and pump oxygen back into the atmosphere as a byproduct. Trees therefore act as a carbon sink by removing the carbon and storing it as cellulose in their trunk, branches, leaves and roots while releasing oxygen back into the air.

Human activities have also led to increases in the concentrations of other greenhouse gases and other pollutants in the atmosphere. During coal mining, methane gases are released. Also during production and transport of natural gas and oil, methane gas is emitted and methane gas has been shown to be twenty times more potent than carbon dioxide. Methane is also emitted during the decomposition of organic waste in municipal solid waste landfills, and from livestock droppings. Nitrous oxide emission occurs during agricultural and industrial activities as well as during combustion of solid waste and fossil fuels. Halocarbons (hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6)) are also very powerful greenhouse gases and are not naturally occurring. They are emitted during the melting and processing of polymers and polymer-base materials and also in a variety of industrial processes. Certain industrial processes such as cement production, waste management systems, and refrigeration, foam blowing and solvent use cause the release of the other greenhouse gases.

Ever since the industrial revolution, humans have tremendously increased the rate of alteration of the climate and the environment through changing agricultural and industrial practices. The population growth which accompanied the industrial revolution worsened the matter because more agricultural lands and development of new cities (urbanization) were needed leading to massive deforestation and changing of the environment. This population explosion also meant more people burning fossil fuels to satisfy their energy requirements. About 98% of carbon dioxide emissions, 24% of methane gas emissions and 18% of nitrous oxide emissions are due to fossil fuels burned to run cars and trucks, heat homes and businesses and power factories. But quite a significant share of emissions is due to increased agriculture, deforestation, landfills, industrial productions and mining.

It has been shown that the industrialized nations emitted more carbon dioxide than the other nations. In fact records have it that in 1997, the United States emitted about 20% of the total global greenhouse gases. Up until 2007, the US was the world's largest emitter of greenhouse gases in terms of total output but when measured per capita, the US still remains the largest emitter and accounts for some 40% of industrialized country emissions. Due to its much longer period of industrialization, the US has emitted far more into the atmosphere than China. This is a serious situation because greenhouse gases such as carbon dioxide linger on in the atmosphere for decades.

In conclusion, climate change resulting from the enhanced greenhouse effect due to heightened industrialization has been presented to have widespread consequences, causing: sea-level rise and possible flooding of low-living areas; melting of glaciers and sea ice; changes in rainfall patterns with implications for floods and droughts; and changes in the incidence of climatic extremes, especially high-temperature extremes. These effects of climate change have been shown to have impacts on ecosystems, health and key economic sectors such as agriculture, and water resources.

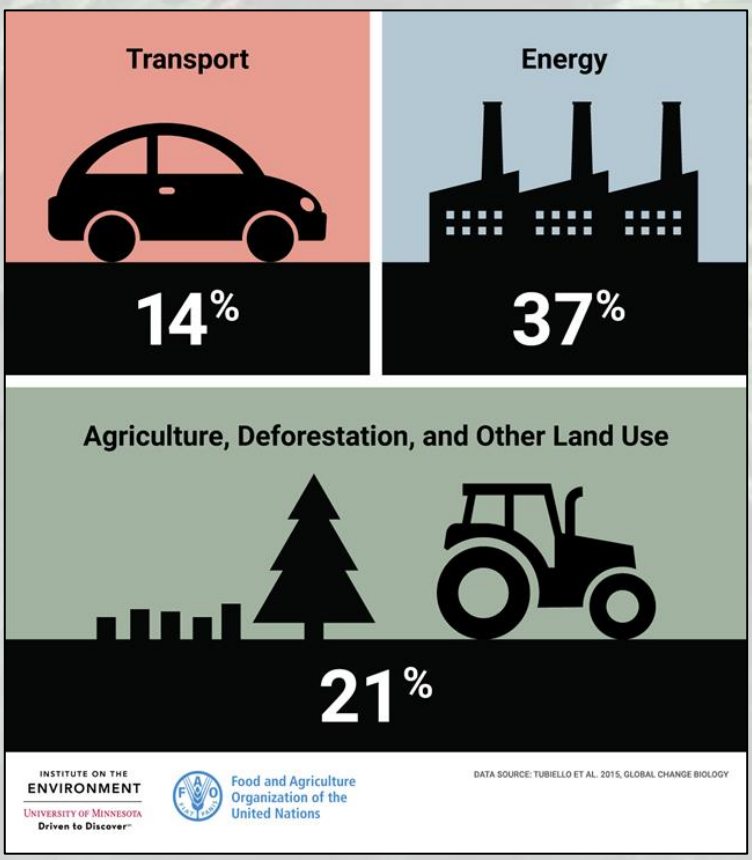
The natural carbon cycle and human-induced climate change differ in that the latter is rapid. This means that ecosystems have less chance of adapting to the changes that will result and so the effects felt will be worse and more dramatic if things continue the way they are now. Therefore, more commitment is required from the industrialized nations towards reduction of emissions. Plans towards industrialization should be more articulate and broadly think of its consequences both in the present and in the future. Environmental impact assessment should be a key part in every plan towards industrialization. Companies and industries should not push back on environmental programs in order to increase profits or to survive in a tough business world. Environmental maintenance agencies should be more focused on the main goal of restoring and keeping the environment in a state fit for human habitation.

AGRICULTURAL POLLUTION IMPACT ON CLIMAT CHANGE

Food is a basic human need, but before you get it on your table, it goes through production, storage, processing, packaging, transportation, and preparation. Every stage of food production releases substantial amounts of greenhouse gases. Agriculture is one of the most common human causes of climate change through emissions of gases and the conversion of forests to agricultural land.

The modern agriculture practices and food production method using synthetic fertilisers are great contributors to greenhouse gas emissions, global warming, and climate change. The introduction of large scale farming has led to deforestation and machine intensive farming, which contributes to carbon emissions.

In livestock farming, ruminant animals digest their food through enteric fermentation that results in methane production; there are also substantial methane emissions from irrigated rice fields. Generally, agriculture contributes to climate change through deforestation, biodiversity loss, acidification of the oceans through agricultural chemical wastes, and accelerated soil erosion.



WILDFIRES

Forest fires refer to phenomenon that have lost human control and are free to spread and expand within forests, causing certain damage and loss to forests, forest ecosystems and humans. Forest fires are a kind of natural disaster that is sudden, destructive, and difficult to handle. While forest management and human development have increased wildfire incidence and risk, climate change has exacerbated the trend of large fires and contributed to the lengthening of the fire season. Fires also simultaneously aggravate the impact of climate change by releasing huge quantities of carbon dioxide and other global warming gases into our atmosphere.

As the first act of this new fire season begins to unfold, we have a renewed opportunity and obligation to address the connections between wildfires, climate change and human activity, and take steps to interrupt this vicious cycle. Now we have a greater risk of hotter droughts. Rising temperatures dry out soils and trees. While drought means that less water is entering the ecosystem, rising temperatures mean that water is leaving more quickly. As temperatures rise, plants lose more water per unit of carbon dioxide, exacerbating the already dry and dangerous conditions produced by drought.

With less water coming into the ecosystem, plants become water stressed, which can kill huge numbers of plants if drought conditions persist. In extreme cases, drought itself can kill trees. Legal and illegal deforestation is a huge issue worldwide. It is vital that everyone is able to explain why deforestation is a problem both locally and globally for the simple reason that it affects everyone. Humans and other animals rely on trees to produce the oxygen that we breathe. Without oxygen, we would not be able to live. Large forest systems, such as the Amazon rainforest, play a significant role in global water cycles. Deforestation of these critical areas affects the availability of freshwater supplies worldwide. Some animals and plants cannot live in regenerating forests. Therefore, the only way to prevent further damage from deforestation is to stop doing it while simultaneously focusing on restoring already damaged areas. Healthy forest ecosystems can take potentially hundreds of years to recover with slow-growing trees.

One of the main drivers causing deforestation is the demand for consumer products. If people only demand products that have been harvested using sustainable methods, then more companies will be required to adopt better practices to remain competitive in the market. For example, when building new homes, people can opt for sustainable building materials. Even by selecting environmentally considerate products during everyday shopping, people can reduce the demand for destructive deforestation

INCREASE OF COST OF FUEL – THE BEST WAY TO SOLVE GLOBAL ENVIRONMENTAL PROBLEMS

All across the world, people are facing a wealth of new and challenging environmental problems every day. Some of them are small and only affect a few ecosystems, but others are drastically changing the landscape of what we already know. Our planet is warming up and we are definitely part of the problem. However, this isn't the only environmental problem that we should be concerned about. For example, car pollutants cause immediate and long-term effects on the environment. Nowadays, one of the biggest issue in our society is fuel consumption.

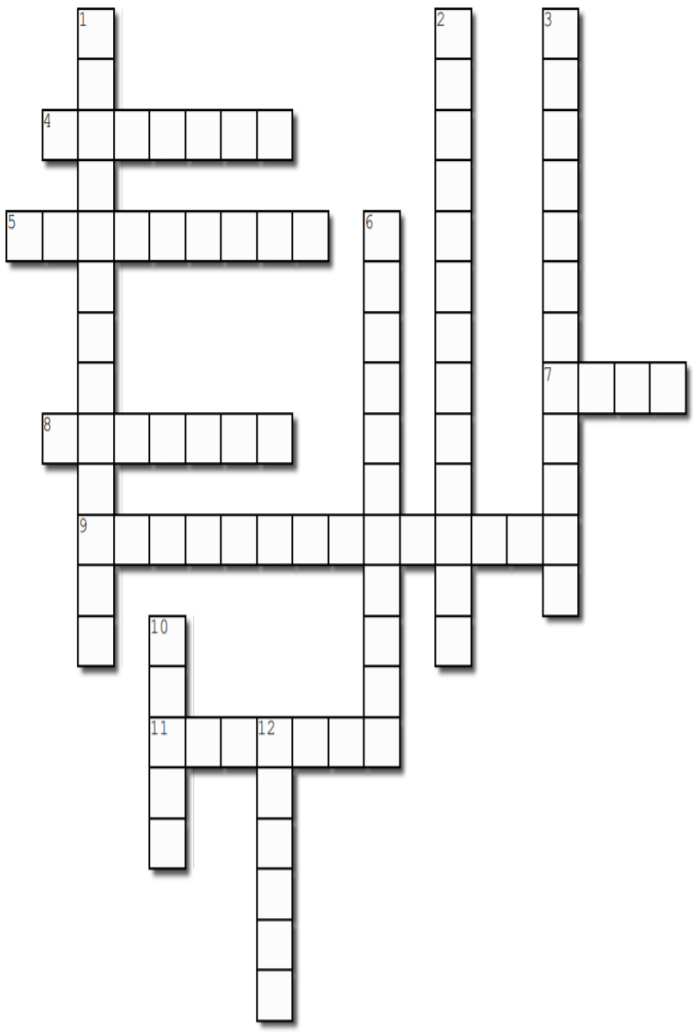
To start with, driving a car produces exhaust, which is one of the biggest sources of pollution human cause in their daily lives. Burning gasoline produces carbon dioxide, resulting of global warming – slow increase in the average temperature of the earth's atmosphere. Scientists have warned that even the difference between 1.5*C and 2*C of heating will expose hundreds of millions of people to significantly higher risks of extreme heatwaves, drought, floods and poverty.

Sadly, but increase of cost of fuel have only a tiny impact on demand. People have become more dependent on cars. The cost of petrol is comparatively low compared with life's other necessities, and rising incomes over the last 40 years have reduced petrol's share of household budgets. Unfortunately Dr. David Bonilla, senior research fellow in transport and energy economics at Oxford University, believes that petrol prices still have a long way to rise before there is any serious fall in demand. A useful analogy, he says, is to compare the price of petrol per litre with that of bottled water: 'They are about the same, and this tells you that energy is too cheap. The price of energy would have to at least double to have some impact on consumption.'

Alternatively, Greg Marsden, senior lecturer and leader of the Sustainable Transport Policy Group at the University of Leeds, believes that taxes based on the amount of CO2 emitted by different vehicles may be the most effective way to cut carbon emissions from transport.2 It could be not only a way, how to reduce carbon dioxide emissions, but also it would help to preserve oil remaining reserves.

In conclusion, all across the world, people are facing a wealth of new and challenging environmental problems every day. One of the biggest problems in our daily lifes is fuel consumption, that causes air polluton and global warming. Increase of cost of fuel could be one of the solutions, how to solve environmental problems, but it may be not so effective than taxes based on the amount of CO2 emissions.

CLIMATE CHANGE, CROSSWORD



Created using the Crossword Maker on TheTeachersCorner.net

Across

4. It prolonged period of abnormally low rainfall, leading to a shortage of water.
5. A biological community of interacting organisms and their physical enviroment.
7. What is this O3?
8. Except of global warming there is also global _____ in some areas.
9. Which nations emit more carbon dioxide?
11. What is emitted during the decomposition of organic waste?

Down

1. It is a greenhouse gas, it starts with a C and ends with global warming.
2. The action of clearing a wide area of trees.
3. What kind of emisions occur during agricultural and industrial activities?
6. It will rise up and drop down independs of the season.
10. Who is the biggest nature destroyer?
12. How do we call the car which has electric and combustion engine?

EU ENVIRONMENTAL STRATEGY 2020 TRUE OR FALSE GAME

«In 2050, we live well, within the planet's ecological limits. Our prosperity and healthy environment stem from an innovative, circular economy where nothing is wasted and where natural resources are managed sustainably, and biodiversity is protected, valued and restored in ways that enhance our society's resilience. Our low-carbon growth has long been decoupled from resource use, setting the pace for a safe and sustainable global society»

1. To turn the Union into a resource-efficient, green, and competitive low-carbon economy. True / False
2. Today, EU citizens enjoy some of the best water quality in the world and over 27% of EU's territory has been designated as protected areas for nature. True / False
3. To stop use plastic bags at all and change them to paper bags. True / False
4. To improve the knowledge and evidence base for Union environment policy. True / False
5. Public authorities at all levels shall work with businesses and social partners, civil society and individual citizens in implementing these goals. True / False
6. The Union has agreed to achieve levels of air quality that do not give rise to significant negative impacts on, and risks to, human health and the environment. True / False
7. Turning waste into a resource and use it for showering. True / False
8. To secure investment for environment and climate policy and address environmental externalities. True / False
9. Promoting a smaller market share of green technologies in the Union and enhancing the competitiveness of the European eco-industry. True / False

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