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EFFECTS OF MODERN TECHNOLOGIES ON PROBLEMS OF TODAY

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ABSTRACT
Environmental problems have become world problems. The community problem of ecology and protection of living and working environment postponed for later expecting that the next generation of the same resolve, and in the meantime the current community adopted an interim decision that led to pollution: air, water, soil, foodstuffs, increase the level of noise and vibration and improper disposal of waste materials (waste). In the air there was an occurrence of smog, acid rain, greenhouse phenomenon and create holes in the ozone layer. Clean river is almost gone, drinking water is less. Water will soon become more sought after than oil, two-thirds of humanity will have pre 2025th year suffer from thirst. It was noted that water shortages most critical factor that can set back the society.
Key words: problem, water, air, contamination matter.

1. INTRODUCTION
People and their environment have been connected and mutually dependent. People have changed the environment due to development of technics and technology. Also, they mostly jeopardized the environment while there was always certain lack in improvement of the environment. Finally, people developed issues on their survival on this planet.
First of all, the world population is constantly increasing. Nowadays, planet Earth is inhabited by six billion and 800 million people while there are predictions that this number will be twice larger in 2030. Although food production constantly increases, the spook of starvation is threatening to the whole world. Even 35 000 children dies due to starvation or poor living conditions on a daily basis. There is decreasing in level of living environment for increasingly high population. Also, there is increasing of many natural resources such as fossil fuels.
Therefore, most important property for the end of second and beginning of third millennium is information that human kind cannot easily tolerate environmental problems nor to delay facing with such problems.

2. THE AIR
Atmosphere is an air layer covering around the Earth. Its thickness is app. 1000 km in area of Equator and 800 km in area of poles. It protects us from negative UV rays and gives us the air we breathe. Without the air, the life on Earth would be impossible.
The air is all around us. Each crack, hole or space are filled with air except if they are filled some other substance. Although air does not have taste, smell or form to be seen, the air exists. It is important for life like water. It includes two main functions: biological (primary) and productive (secondary).

The air is environmentally very important since it includes gasses necessary for living: oxygen, carbon monoxide and nitrogen. On daily basis, human organism needs seven times more air than water (per weight). Also, the need for air is to ten times higher than need for food.

2.1. Sources of air pollution

World Health Organization considers air pollution as a situation in which atmospheric spaces include components whose concentration can be harmful for people and their environment (plants, animals, water, soil and property).

Although air pollution is the oldest form of environment pollution, most significant air pollutants were volcanoes and occasional forest fires during the ancient times. Nowadays, polluted air we are forced to breathe is a consequence of human activities. Most significant air pollution developed using fossil fuels in 13^{th} and 17^{th} century. The greatest and highest pollution of the atmosphere using radioactive substances was developed by first atomic bomb on Hiroshima in 1945 while it culminated due to accident in Chernobyl on 1986.

The air in urban and industrial centers is highly polluted. Nowadays, more than two-thirds of world population do not breathe clean air.

There are numerous air pollution sources and they can be natural (volcanoes eruptions, forest fires, storms, earthquakes) and artificial.

Most important artificial sources of air pollution are following: motor vehicles, industry, power plants, heating systems, plants for waste burning etc. Gasses include 90% of total mass of these sources while solid particles are included in 10% of this mass.

2.2. Protection of air from pollution

In order to decrease air pollution developed from artificial pollution sources, following actions are needed:

- to use materials which include least amount of hazardous components,
- to follow processes which provide the least possible amount of waste,
- to conduct filtering of contamined waste mediums,
- to provide closing of smaller boiler rooms and introduction of larger central boiler room and
- to include no-waste technologies since they review pollutions and find best solutions relating to them.

2.3. Greenhouse effect

Greenhouse effect is discovered by French physician Joseph Fourier during 1824. It is a process in which Earth is heated due to absorption of infrared radiation. Earth would be colder for 30˚C without natural greenhouse effect. Using wrong analogy, this effect was named by method for plants breeding in closed glass gardens using solar energy while preventing the energy loss due to air flow. Earth receives the energy from the Sun in form of heat radiation. If it is assumed that Earth lies in a stabile energy balance, the energy which arrives on the Earth needs to be sent back to the universe in the same amount. The radiation which leaves the Earth includes two forms: reflected solar radiation and emitted infrared radiation. Earth reflects about 30% of the energy received from the Sun while other 70% is absorbed, used for heating of soil, atmosphere, oceans and providing of life on the Earth. Acting like heated body, Earth emits this energy via radiation into universe which provides heat equilibrium. The key factor for the greenhouse effect is the fact that the atmosphere is permeable to solar radiation but it strongly absorbs infrared radiation with higher wave length which is emitted from the Earth surface.

2.4. Acid rains

Rain and other falls should have neutral pH value as water vapour condensers. However, these falls have various pH value which is often lower. In other words, falls have increased acidity. Also, pollution substances from the atmosphere can fall in form of dry sludge. All falls with pH value lower than 5,6 are known as acid rains. Many areas in the world have these rains with lower pH value.

They appear due to presence of certain pollutants in the air (SO_2, CO_2, NO_x) which dissolve in contact with water in the cloud. As a result, the higher concentration of hydrogen ions develops which lowers

the pH value. Emitted SO_2 transferred into atmosphere turns into sulphuric acid and sulphurous acid, and sulfates. It is noted that this conversation develops during 72 hours while lower limit of the acidity of rains has the value pH 3,4.
Present carbon (IV) oxide in the atmosphere partially dissolves in the water which develops carbonic acid (H_2CO_3). This acid increased acidity of rains. Nitrogen (IV) oxide in the air turns into nitrous and nitric acid, nitrites and nitrates. Level and speed of these changes is similar to sulphur (IV) oxide. Acids developed in the atmosphere in this way fall with rains and other falls or simply deposit under the influence of gravity force.

2.5. Depletion of the Ozone layer

Ozone (O_3) is the allotropic modification of the oxygen. Also, ozone develops by dissociation of oxygen molecules (O_2) on two atoms of oxygen (O) under the influence of sunlight within the stratosphere. After that, O combines with O_2 and develops O_3. Ozone molecules absorb ultraviolet rays with wave length of 200 to 310 nm while molecule of O_3 dissolves on O_2 and O. This is continuous process which ends when oxygen atom is recombined with O_3 molecule. This reaction creates two molecules of oxygen.
Term known as "depletion of Ozone layer" is used for description of two following phenomena: first is slow but stable drop for 3% per decade of total amount of Ozone in the Earth stratosphere during last twenty years of twentieth century; second phenomenon is more greater but seasonally sensitive drop in stratospheric Ozone above polar regions on Earth during the same period. This phenomenon is known as Ozone hole.

3. WATER

The importance of water for humans, living organisms, ecosystems, planet as a whole is great and multiple since water is the source of life and it has numerous functions.
Hence, water has following properties:

- It is basis for life and medium where life has started,
- It is necessary nutrient for complete biocenose including humans,
- It is irreplaceable substance,
- It is source of food and necessary minerals,
- It is working topic and tool for work,
- Water is common social wealth,
- Water is medium for many living organisms,
- Natural aesthetic element,
- Medium for recreation.

According to data, 25.000 of people dies due to lack of drinking water or illnesses caused by consuming of polluted water each day. It is ten millions of people on annual level. Every fourth man in the world consumes hygienically correct water. It is 22% of the entire human population. Irregular exploitation and pollution has jeopardized the world's water supplies. According to data from UNESCO, reserves of drinking water will be decreased for 30% during next 20 years. There is an opinion that 40% of world population does not have enough amount of water for its daily needs.
Water is the basis for the entire life on Earth. As such, it is an important component in all living organisms. Water plays an essential role in each biotope.

4. GENETICALLY MODIFIED FOOD

Genetically modified products are products with changed part of their genetic material or DNA which is known as carrier of hereditary characteristics. This process started with lower forms of organisms, bacteria and viruses. After that, it continued to be applied on lower and higher plants and finally on animals and humans. Therefore, transplanting of genes which influence on size can provide much bigger plants and much bigger and sweeter fruits than they would be in normal conditions.
Production and sale of genetically modified food is developed due to its advantage for producers and buyers. Products are cheaper, last longer and have higher nutritive value. Most common products exposed to genetic modification (GM) are following: soya, corn, potato, canola and rise. Despite to opinion of the EU, GM corn is very common in Europe. It is planted by Spaniards, Germans, French,

Portuguese and Czecs. GM potato, “improved” by proteins is defined as harmful during testings. Allegedly, it damages liver and creates numerous health issues. GM rice is dangerous for people and environment.

5. SOIL

Soil is very important for life on earth, human survival and development of human civilization. It is source of energy (fossil fuels), numerous minerals, macro and micro elements necessary for development and maintenance of all living organisms. Also, it is source of water and other living organisms, including humans.

5.1. Sources of soil pollution

Soil is jeopardized due to continuous urbanization spreading. Cities constantly increase and connect with villages and other cities/towns. Hence, large forest complexes and arable land surfaces are destroyed in this way. Soil is covered with various industrial facilities, auto roads, railways, pumping stations, sanitary facilities, industrial and municipal waste etc.

6. WASTE DISPOSAL

Human kind produce greater amounts of municipal solid waste during last several years. Available space for its sanitary disposal is getting smaller. On the other hand, temporary disposed various amounts of most different kinds of dangerous waste are also higher and guarded in inadequate environmental conditions. Also, greater amounts of different dangerous wastes develop constantly. Very small part of these toxic substances is permanently destroyed while part of them is still recycling.

Serbia includes 164 landfills of public municipal companies and more than 4.401 of illegal landfills. Most of them are placed nearby water sources and they include very dangerous waste and similar substances.

Waste includes all kinds of unnecessary materials in solid, liquid or gaseous condition which are produced during: production, traffic, use, stocking etc.

7. NOISE

Noise has become one of main environmental pollutants. It has adverse effect on health of population. Beside pollution of air, water, food and soil, noise is very intensively studied problem in the world during last decades.

Noise can be explained as physical phenomenon with its own properties and parameters available for definition and following. Also, it can be defined as physical phenomenon with all implications related to human and his organism.

8. CONCLUSION

Nowadays, environmental problems have become “world problems”. Environmental problems are delayed by social community during last years and left to future generations to solve them. Such approach led to destroying of natural resources: air, water, plants, soil, roofs, monuments, cultural and historical heritage and to greater nuclear pollution. Environmental remediations are problem for the entire Balkan region. If the solution does not provide soon enough, international pollutions will cover the entire space and become dangerous for living.

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