

SAVE THE WORLD THROUGH UTILIZING PLASTIC POLLUTION



AIM:

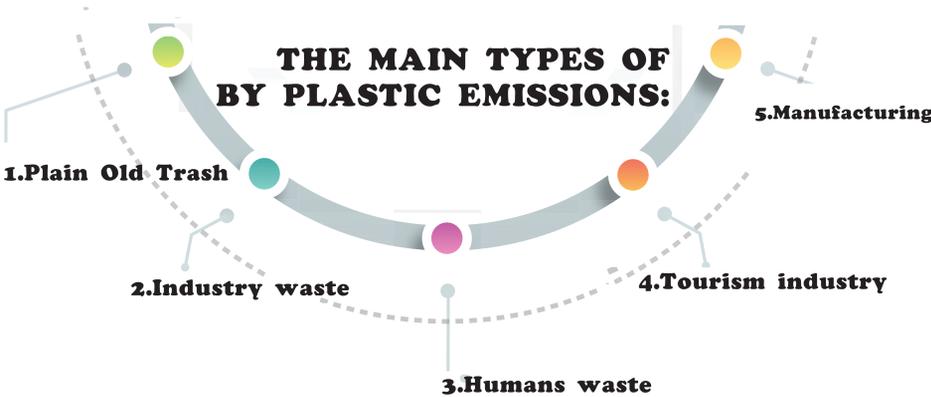
Analyze the effects of plastic pollutants on the quality of the land and identify the most effective ways to reduce this problem.

RESEARCH QUESTIONS:

Is it possible to solve the problem of land pollution through utilizing plastic pollutants?

SECONDARY RESEARCH RESULTS:

Plastic pollutant is the accumulation in the environment of synthetic plastic products to the point where they create problems for wildlife and their habitats as well as for human population. In 1907 the invention of Bakelite brought a revolution in materials by introducing truly synthetic plastic resins into world commerce. By the end of the 20th century, plastics were found to be persistent pollutants of the whole environment.



WHAT ARE THE EFFECTS OF PLASTIC POLLUTANTS ON THE ENVIRONMENT?

polluting the land
 damage the quality of land
 land contamination
 spending oil resources
 damage green environment
 polluting the water
 reduce marine animals
 air pollutions CO2
 negative effects to the health -increasing allergy

STATISTICAL DATA ANALYSIS:

ONE MILLION plastic bottles are bought EVERY MINUTE around the world — and that number will top half a TRILLION by 2021. Less than half of those bottles end up getting recycled. [6]

In 2018, Great Britain's Royal Statistical Society named the fact that only about nine percent of all plastic ever made has likely been recycled [7]

CO² EMISSIONS AROUND OF WORLD , kg



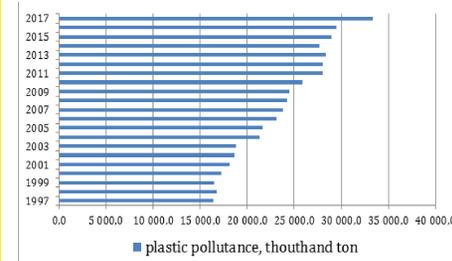
If plastic consumption increases at its current rate, according to National Geographic, by 2050 there will be 12 billion metric tons of plastic in landfills. [8]

Plastic concentration in the ocean reaches 580,000 pieces per km² while production is growing exponentially. [9]

The winning international statistic of the year was 90.5%

- the proportion of plastic waste that has never been recycled [10]

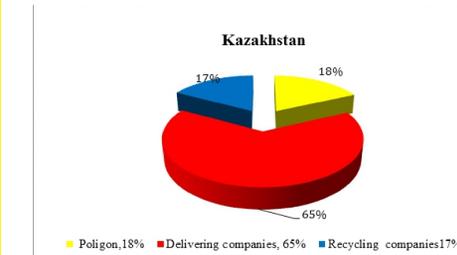
Dynamics of plastic pollution in Kazakhstan



The graphs shows that, the dynamics of plastic pollutants increased steadily during the 1997-2017. Government try to solve this problem by establishing the Low of Environment and by increasing government expenses for the delivering and recycling companies.

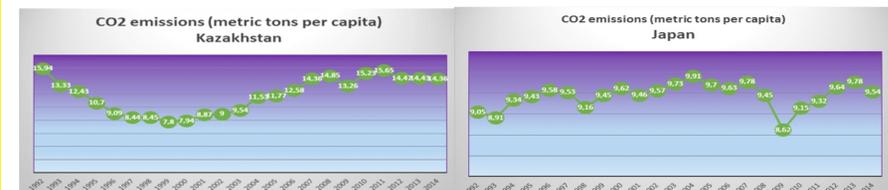
In different countries financial supporting by government implemented differently. In many developed countries, 50% of the government expenses to environment protection allocated for recycling companies, about 40 percent for delivering companies and 10 percent to clean landfill.

In Kazakhstan the dynamics of government expenses to environment distributed differently: 65 percent of the environment expenses provided by government allocated for delivering companies, about 17% for improving financial conditions of recycling companies and about 18% has taken poligon.



Kazakhstan has huge poligons where only the dumping of garbage takes place in all regions of Kazakhstan which is incomprehensible. The negative effects of these pollutants increase the level of CO₂ in last period of time. The one of the most sources of increasing plastic pollution provided by industries and humanities.

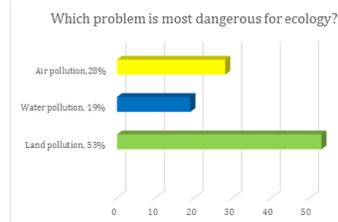
The next graphs show the analysis of the CO₂ emissions per capita between two countries: Kazakhstan and Japan.



The graphs show that, eventhrough the government of Kazakhstan increases the amount of government expenditure, the value CO₂ emissions metric tons per capita has rising steadily in comparison to Japan.

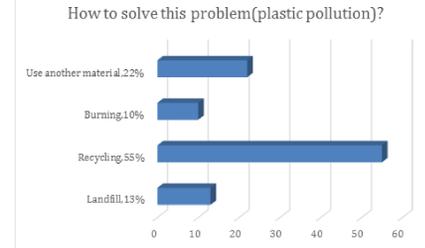
PRIMARY RESEARCH. RESULTS OF SURVEY:

In order to identify society's opinion "How to solve the plastic problems " we conducted a survey. The survey was aimed to spot society's opinion about the problem. We used non-biased questions which state neutral position. 50 people provided us with their answers.



The survey was made, as it can give certain information. This survey included 2 questions, which can estimate the influence of different types of pollutants. The first question was: "Which problem is the most dangerous for ecology?". 53% of people answered that it is land pollution. It includes plastic pollution. However, 28 % of people chose air pollution, 19 % said water pollution.

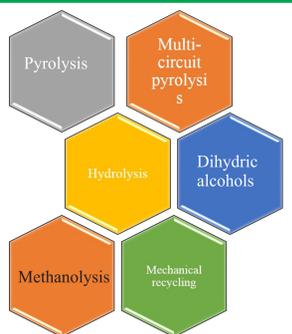
The second question was: "How to solve this problem(plastic pollution)?". There were 4 versions of an answer. The first version was chosen by 13% of people. It was landfills. The second was burning, 10%. Nevertheless, recycling, which was the last variant got 77%. This survey showed a big danger of Land pollution and a popularity of recycling.



EVALUATION

Firstly, we found the following information by conducting the secondary research. To reduce this problem science should use the following methods of utilizing plastic pollutants. Some scientists suggest to burn plastic pollutants, however, through burning the plastics we damage air and the main effective way is to utilize them by using chemicals or find another materials .

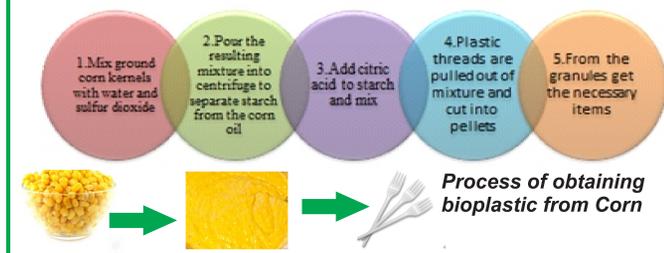
Secondly, we identified that we can't utilize all types of plastics because some of them are not recyclable. Government and factories, enterprisers must be familiar with it. The next picture presents the types of plastics which can be utilized, avoiding environmental destruction.



FINDINS AND RECOMMENDATIONS



In order to avoid plastic pollutants which can't be recycled, we recommend establishing biological plastic. We tried to use the next method of making bioplastic and practiced it at school laboratory with our teacher.



Methods of utilizing plastic pollutants.



Types of plastics which can be recycle

CONCLUSION AND RECOMMENDATION:

In summary, to reduce effects of plastic pollution we should implement the following:

Use a new biological method of plastic production, which means the obtainment of plastic from corn.

- Use plastic like supplement for building materials (glue materials)
- Stop production of plastics which can't be recycled;
- Increasing tariffs for environment (the percentage of tax);
- reduce plastic production;
- collect plastic bottles and replace it with bus tickets (experience of Surabaya,Indonesia)
- Familiarize citizens with the consequences of plastic pollution in order to increase their awareness.

REFERENCES:

<https://www.britannica.com/science/plastic-pollution>
<https://www.conserve-energy-future.com/causes-effects-solutions-of-plastic-pollution.php>
<https://data.worldbank.org/indicator/EN.ATM.CO2E.KT?end=2014&start=2014&view=map>

<https://data.worldbank.org/country/japan?view=chart>
<https://www.unenvironment.org/interactive/beat-plastic-pollution>
<https://www.earthday.org/2018/03/07/fact-sheet-end-plastic-pollution/>
<https://www.theguardian.com/environment/2017/jun/28/a-million-a-minute-worlds-plastic-bottle-binge-as-dangerous-as-climate-change>

<https://news.nationalgeographic.com/2018/05/plastics-facts-infographics-ocean-pollution/>
<https://reduceimpact.org/plastic-pollution-statistics-2018/>
<https://www.bbc.com/news/uk-46602969>
<https://news.nationalgeographic.com/2018/05/plastics-facts-infographics-ocean-pollution/>
<https://reduceimpact.org/plastic-pollution-statistics-2018/>
<https://www.bbc.com/news/uk-46602969>