
From: Climate Detectives
Sent: joi, 11 aprilie 2019 22:04
To: doamna_t@hotmail.com
Subject: LPS 2019 Climate Detectives School Award

Dear Climate Detectives Team,

Thank you for submitting your report to the LPS 2019 Climate Detectives School Award. The winning teams will be announced on 1 May 2019.

For more information go to esa.int/ClimateDetectives

Best Regards,
The ESA Education Team

LPS 2019 Climate Detectives School Award

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1. Summary *

Tornadoes in Romania – causes and consequences

The tornado from Facaieni, Ialomita, Romania on August 12, 2002 was the most powerful tornado in Romania, wind speed 252–330 km/h. We believe this phenomenon was influenced by global warming and CO2 emissions from human activity.

That is why we analyzed the level of global warming in our area – Galati, Romania. For this they we studied the evolution of temperatures in recent years in Romania as well as tornadoes of different intensities signaled in our country.

The temperatures in Galati during 2010–2018 showed an increase in average temperatures in 2018 compared to 2010. The data came from meteoblue.com, the average temperatures of different years have been calculated and compared.

We used also the CO2 calculator, each of us entered data related to the household energy consumption, the means of transport used, the type of bulbs in the home. The results have highlighted that a family emits about 8 t to 10 t CO2/year in the atmosphere.

We decided to reduce CO2 emissions by planting fruit trees in the small school's orchard and caring for those already planted, using bicycles and electric cars, purchasing household appliances with A+++ labels, reducing food waste.

2. Methods and results *

I. Comparative temperature study in Galati during the period 2010–2018 using meteoblue.com revealed an increase of the average temperatures in 2018 compared to 2010, the years 2012 and 2018 being the hottest years of this time. The study of temperatures in Switzerland during the same period revealed that in August 2018 recorded an average of 25.4 degrees Celsius versus 17.5 degrees Celsius average August 2010. We collected the data from meteoblue.com, the average temperatures of different years have been calculated and compared.

II. The CO2 emission study was carried out using the CO2 calculator, each member of the team entered data related to the consumption of household appliances, the means of transport used, the type of bulbs in the home. The results revealed that a family is emitting between 8t and 10t CO2/year.

III. The number of trees needed to balance carbon emissions with photosynthesis.

$8t \times 100,000 \text{ families} = 800,000 \text{ tons/year CO}_2/\text{Galati city}$

$800,000t / \text{year} = 800,000 \text{ trees minimum}$

Maximum allowable carbon footprint for sustainable development is 2 tons/year/person.

Eurostat statistics show that each European emits about 10 tons of CO₂ over a year and one tree manages to absorb at the same time only one tone of CO₂.

File 1



[tornadoes_in_romania.pptx](#) 9.33 MB • PPTX

3. Discussion and conclusions *

The results obtained were presented to the pupils of the school during an informative session held in January 2019.

The ecological and economic consequences of climate change have been presented.

In the following years, the Earth's temperature should increase by at most 2 degrees Celsius, otherwise the effects could be disastrous (floods, drought, sea level rise, destruction of transport infrastructure, farm damages).

Solutions:

Plant as many trees, care for the existing!

Walk, use electric car or electric bus!

Reduce electricity, water, gas!

Avoid the food waste!

Disable the stand-by function, many electronic devices can consume current even if they are not turned on.

Isolate your house!

Buy Energy Efficient Household Appliances.

Choose a low fuel economy car.

Make the most of the means of public transport.

Choose holiday destinations closer to home!

Use as much natural light as possible.

Sets the thermostat less than usual!

"Climate don't have to write the history of mankind"!

Link to <https://youtu.be/WjiBolZiYsE>
video *
