

How climate change affects our world and what we will have to deal with in future



Global warming

Climate change is one of the greatest contemporary challenges!

If we do not take measures, it will have a serious impact on the planet and will dramatically change the way we live!

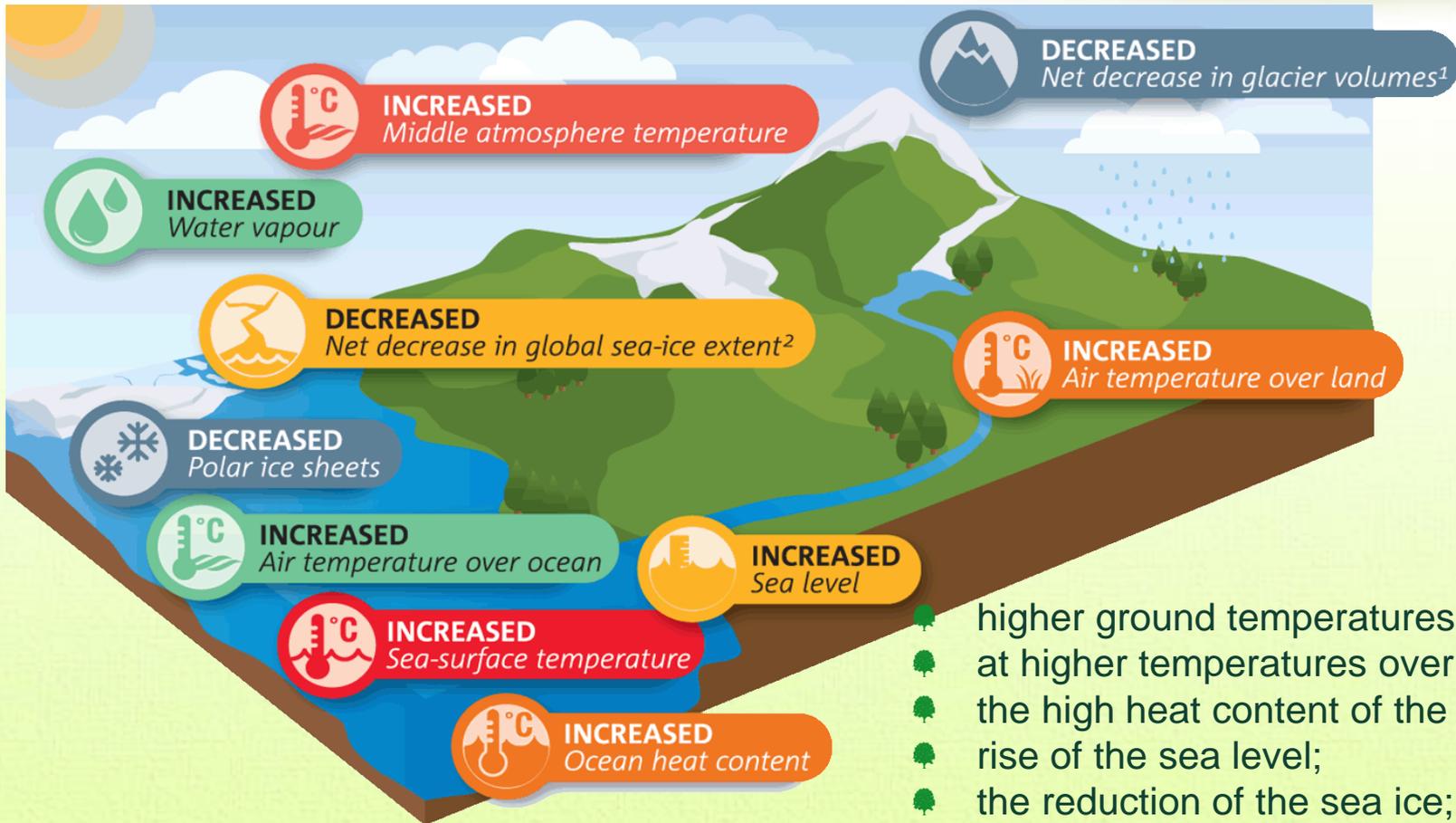
Global warming is increasing the average temperature of the global ocean and the atmosphere of the Earth, which is monitored by the 50s of the 20th century.

- Climate change is caused by human activities emitting greenhouse gases (CO₂, CH₄, N₂O and fluorine compounds).
- Carbon dioxide and other greenhouse gases are emitted by factories, cars and households using wood and coal for heating.





Key indicators showing that global warming is a fact are:



- higher ground temperatures;
- at higher temperatures over the oceans;
- the high heat content of the oceans;
- rise of the sea level;
- the reduction of the sea ice;
- the reduction of the snow cover;
- the shrinking of glaciers.



You can see the conclusions of UN report on the screen:

- 11 out of 12 consecutive years (1995-2006) are among the hottest since 1850
- average amount of sea ice in the Arctic has decreased by about 40% in the decades;
- snow cover in the Northern Hemisphere has decreased by 10% since the 60s of the last century;





You can see the conclusions of UN report on the screen:

- Spring occurs progressively earlier each year, resulting in a change in the biological life cycle;
- There is a migration of plant and animal species to the pole latitudes.
- The temperature in Europe in the last century has also increased by almost 1 ° C.

Rainfall and snowfall has significantly increased in northern Europe (10% to 40%), while in southern Europe they decreased by about 20% and more commonly are seen drought.





How climate change affects our world

Our nature is threatened!

- 🌿 Plants, animals, birds, forests, oceans, rivers and fields - all what makes our planet so diverse is under increasing threat.
- 🌿 Loss of biodiversity, all those things we take for granted will disappear - drinking water, fresh air, organismal diversity, healthy food.

Can we imagine the world without a walk in the forest, without bird songs or plants around us?



The ecological problem is global!

Europe is home to about 200 000 different species of plants and animals. Many of them are threatened with extinction. In such a state are:

- 🌳 **52%** of species of freshwater fish;
- 🌳 **45%** of reptiles and butterflies;
- 🌳 **42%** of indigenous mammals;
- 🌳 **30%** of amphibians;
- 🌳 **43%** of birds.





The ecological problem is global!

- At sea, whole colonies of the species cod and halibut die, as well as 800 plant species.
- What would we do without them? Have we thought that it might be precisely these endangered species the basis of new medicines!





The ecological problem is global!

- If emissions are not reduced, the concentration of greenhouse gases in the atmosphere is expected to double compared to pre-industrial times to 2035.
- In the long term there is a risk of global warming by more than 5 ° C.
- The consequences of such warming will cause significant changes in the global map. Over 200 million people will have to migrate due to sea level rise and extreme events such as floods, droughts and hurricanes.
- Global warming above 2 ° C would cause irreversible damage to the planet's biodiversity, water resources and the global food market.





Report of the European Environment Agency, shows that:

- Extreme weather events become more frequent, such as heat waves and floods.

Heat wave in Europe in the summer of 2003 caused the death of over 70 000 people. In 2020 it is predicted an increase in mortality associated with extreme heat waves up to 25 000 people per year in the central and southern European regions;

- It is envisaged an increase of the average temperature in the surface layer of 1.4 to 5,8 ° C by the end of the century compared to 1990;
- It is expected that sea level will rise by 18 to 59 cm between 1990 and 2100. Sea-level will rise with 50 cm, which would endanger (due to flooding, hurricane storms and other extreme events) the lives of 92 million people worldwide;



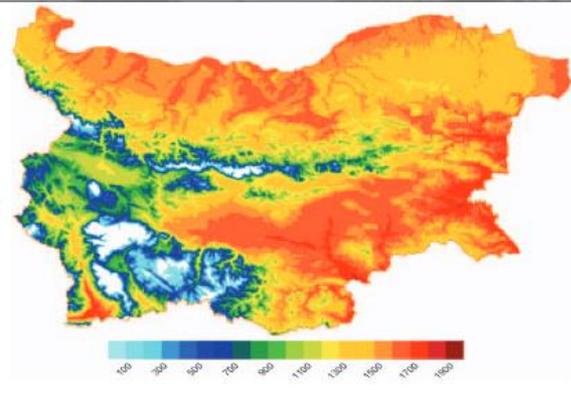
Report of the European Environment Agency, shows that:

- It is expected strengthening in the intensity and frequency of weather events such as droughts and hurricanes. Sectors such as agriculture, forestry, energy, and tourism will be significantly affected.
- The problem with the access to drinking water gets deeper;
- The spread of disease increases, limited to some tropical areas and in other areas of the globe.



Facts about Bulgaria

- Since the late 70s of the 20th century in Bulgaria there is a tendency towards warming. The average annual temperature in 2011 is 0,4 ° C above air norm. It is just another of the 14th years, with temperatures greater than normal for the country.
- There are more and more long periods of drought, followed by severe storms and severe flooding and damage with victims.





Facts about Bulgaria



- There are extreme weather and climate events such as:
 - Increasing the average number of days with daily rainfall over 100 mm - about 30% in the period 1991-2007 compared to the baseline period (1961-1990);
 - Increase in registered in the meteorological network cases heavy rainfall;
 - Higher rates of spring-summer type showers with rainfall, thunderstorms and hail in the winter months like January and February;
 - Increasing the frequency of the average number of days with thunderstorms and hail in April and September, the period 1991-2006, compared to the same base period.



Facts about Bulgaria



- Reduction in the annual amplitude between maximum and minimum air temperature;
- Reduction of the snowy months in the mountains and the snow cover shows a steady tendency towards thinning.
- Displacement of the upper deciduous forests to greater height. Over the past few years the Bulgarian forest lost 10% of its territory, the fires have increased seven times.
- Accounting for 40% shorter period of snow-retention and a dramatic reduction in the accumulation of snow mass. In plain parts of the country there is snow only for 2 to 4 weeks a year, and in the country are entering unusual vector diseases.



According to the National Institute of Meteorology and Hydrology at the Bulgarian Academy of Sciences by 2050 the climate in Bulgaria could pass into subtropical, but with the current rate of warming that could happen sooner. The consequences of this are hard to predict, the main danger is considerable drought and warming. High temperatures will be reflected in a weaker agricultural crop. Some of the most pessimistic scenarios did foresee the disappearance of 60% of the plants and animals in the mountains.





What we will have to deal with in future

- Most climate models predict temperature increases of the air in Bulgaria from 2 ° to 5 ° C by the end of the century.
- Winters, classified during the present climate as cold, will occur less often in the 20 years of this century and will probably disappear completely in the 80 s.
- Hot summers will occur more often during the 80s almost every summer is expected to be unusually hot.
- Winter precipitation in Bulgaria will increase by the end of the present century, but precipitations during the warm half of the year and especially during the summer are expected to decrease.
- The frequency of the waves of hot air will increase, combined with increased humidity and urban air pollution.



What we will have to deal with in future

- There is a risk of further limitation of water resources, caused by more forest fires, landslides and floods, global warming means probably a boom of infectious diseases (including unusual for our latitudes as malaria). Since approximately 61% of the forests in Bulgaria are below 800 m above sea height, most of the forests would have been affected by the drastic climate change.
- More vulnerable in the future will be spring crops sown on fertile soils and arable land in southeastern Bulgaria, where even at present climatic conditions; precipitation quantities are insufficient for normal growth, development and yield of crops.



Bulgaria's commitments to tackle climate changes

- Bulgaria has ratified the UN Framework Convention on Climate Change in 1995, thereby assuming a duty to keep its GHG emissions below their base year emissions.
- The largest share of total greenhouse gas emissions in the country have the following sectors: Energy, households and services, disposal, transport, industry, agriculture.

214 billion leva will cost the measures for adaptation to climate change in Bulgaria.

Energetics

Energy investments will have to be directed to the passage from coal to natural gas and the implementation of "clean" coal technology. It is envisaged that the share of nuclear energy to reach 45%, and 15% renewables in the total energy mix of the country.



Energy efficiency measures

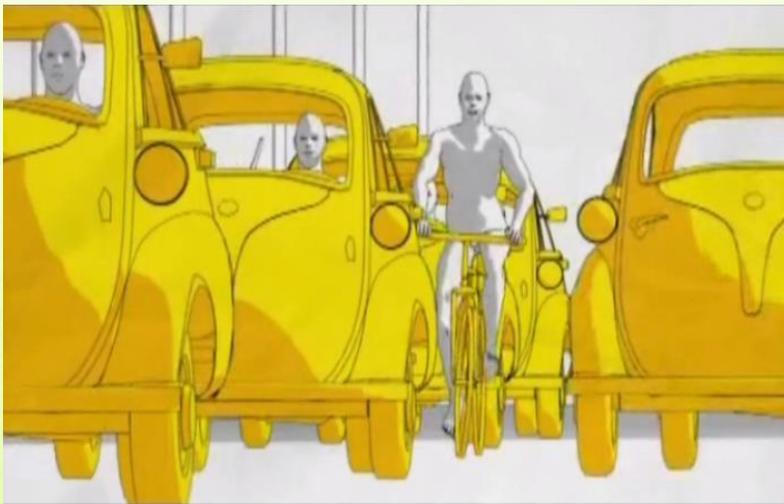
The objective in the national plan is each year to be sanitized at least 3% of the buildings and 1000 roofs to be equipped with solar panels to generate electricity and hot water for buildings.
Industry

Purchasing new more efficient equipment and switching factories to fuel from waste instead of coal and oil.



Transport

Improvement of road-infrastructure, implementation of intelligent systems for traffic management to reduce congestion in cities. Improving the public transport and construction of bicycle paths.



Agriculture

Construction of new facilities for manure storage systems and use of plant wastes in agriculture.
Forestation and maintenance of forests, which naturally absorb carbon dioxide.



Waste Processing

Construction of new facilities to process waste, in order to be used as fuel and cleaning plants for waste waters to be built.



If we do not pay attention to the signals that climate changes give us our fertile garden - the Earth will be destroyed, and with it the life on it!

Let us leave ecological footprint!

