

climate adaptation measures

from symptoms to scenarios to actions

We climbed
to the tree
but we are
in the wrong
forest



Impetus



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What are the challenges in climate adaptation?

enrich biodiversity | protect biodiversity | minimize biodiversity lost | implementing local-level biodiversity support activities

As the global population of wild species has fallen by 60 percent over the last 40 years, European Green Deal priorities include protecting biodiversity and reverse the degradation of ecosystems.

Biodiversity refers to two words: biological and diversity. Biodiversity is the variety of life that can be found on earth, which, kept in balance, supports human needs, and contribute to wellbeing.

Biodiversity is discussed on three levels – genetic, species and ecosystems. Plants, animals, fungi, microorganisms and their habitats in which they live, balance in oxygen production and climate change mitigation by storing CO₂.

But biodiversity also ensures the food and nature access security, limits diseases and increase economic incomes for example from tourism.

The main reason of biodiversity declination or disappearance is human activity and climate change. The conservation process should focus on biodiversity protection. This can be achieved by removal of exotic species, valuating ecosystems services, creating protected areas, introducing restoration technics or creating gene banks.



Ten things you can do for change

1. Avoid extensively managed green areas
2. Create bee-friendly urban wildflower meadows
3. Create clean and healthy open water reservoirs
4. Develop urban forests
5. Connect urban greenery
6. Support urban wildlife animals
7. Use renewable sources of energy
8. Limit energy usage
9. Reduce deforestation for CO₂ storage
10. Eat responsibly



1. Avoid extensively managed green areas

Advantages

- More native, local species
- You can observe wild animals, insects and plants
- Less pesticide is healthier



You can detect poor biodiversity everywhere, where you find only one or two species of plants. It is often linked to optimised harvest, or using pesticides. It results also in the lack of variety of animals, what is the visual symptom.

Areas, that are left alone, without any treatment, play a crucial role as the bank of the genes of native, local species. It is a balance between pests and diseases in nature, run by the ecosystem itself.

Let land left untreated, protect selected green areas, which represent different natural ecosystems and let them be wild. There is a shift towards loving such natural, untreated lands. Because people have already learned that there is much to detect in spare time and higher value for recreation.

Leave heap of wood for insects and animals to get shelter.



Ban fertilizer and pesticides for more biodiversity.



We need to feed the cattle but shrub fences are good for biodiversity.



2. Create bee-friendly urban wildflower meadows

Advantages

- Pollinating insects help plants' biodiversity and food production
- Honey plants also in cities support insects
- Flowering plants like beans enhance your liveability and happiness



If it is spring or early summer and you can't see flowers or flowering trees, then you know that there is a problem for bees and other insects. Even butterflies are possible in cities. When did you see the last one?

Without pollinating insects there is no harvest. They play a crucial role in food safety. More than 75 percent of global food crop types rely on animal pollination. Planting meadows and reduction of the pesticides use, can halt, and reverse the decline of pollinators. To be effective honey plants are to be seeded on the areas of a maximum 200 meters distance.

Use natural compost and biowaste to enrich the soil and plants. You can even build an insect hotel, known as a bug hotel or insect house.

Plant meadows, multi-flower does not require regular mowing or fertilizing.



Plant and let grow - even common greens can be used.



No, no, there is no too small pot! Create and love a green spot wherever you can!



3. Create clean and healthy open water reservoirs

Advantages

- Water reduces temperature in the summer
- Plants can restore soils, even in the marshland
- Infiltrated water nourishes the land around by its humid biosphere

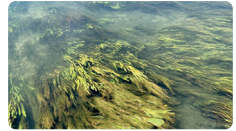


Was the land in your youth greener than it is today? Does your land look like Tuscany in summer? It might look nice but is a symptom of a drastic change toward climate crises.

These small water reservoirs such as local ponds, streams can be supported with water natural infiltration systems based on different fractions and plants. Infiltration is a method by which contaminants such as suspensions, bacteria, colloids, algae, pesticides are removed from the water.

As plant roots increase infiltration and reduce run off, which help mitigate flooding and recharge ground water. Thus it is useful to connect the natural basins with greenery. Plants can even remove nitrates and phosphates or metals from the water.

Restore former water ponds and create recreation areas.



Establish water spots as a source of joy.



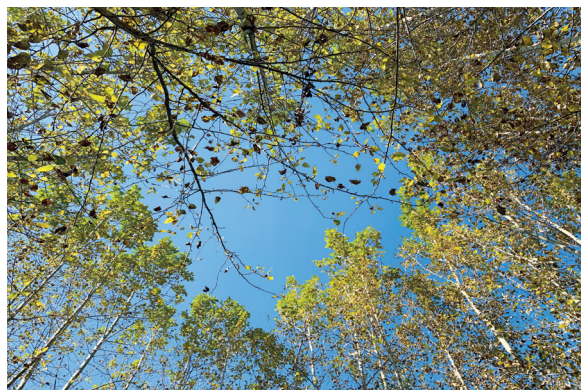
Yes, even where we do not await, nature conquers back.



4. Develop urban forests

Advantages

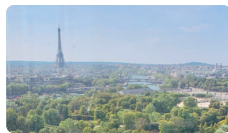
- Urban forests are key to prevent Urban Heat Island
- You will find a cool spot during hot days there
- Leaves clean up the air in the cities



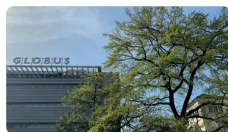
Can you spot died trees at hot spots in the city? Are these spots very often there, where high radiation in the later afternoon can be found? Then, the only trees are not enough, you need more trees.

We need urban forest for cooling cities in summer. Trees reduce temperature through evaporation. Leaves serve as air purifier for fine particular matter. Urban forests consist of tree populations and other green elements in urban settings. The concept of urban forestry focus on management and promotion of their role as a critical part of the urban structure with the set of benefits called ecosystem services. Urban forestry was developed to address the issue of impact on forests by urbanization. Apart from increasing biodiversity, trees store CO_2 . Urban areas with trees enrich human well-being.

Plant trees to enjoy the shadow later.



Plant trees to purify the air.



Sorry, trees of your neighbour work very well on climate improvement!



5. Connect urban greenery

Advantages

- Animals can hop from spot to spot
- Seeds will find their way among green corridors
- Trees need their being linked together with their roots and mycorrhiza



When you wake up in the early morning and you only hear cars then there might be a problem of lack of urban greenery. And if it's very hot in your city in summer, and no shady spots to cool down, then you have a problem for sure.

The ecological system consists of patches and corridors that provide landscape connectivity, ultimately improves population viability.

This can be achieved by adding greenery to areas with other functions and ensure at least 25 percent of the plot area devoted to environmental solution. Such solutions result in good well-being of citizens and healthy animals populations. Studies on birds have suggested that 10–35 hectares of continuous green space are required to support most urbanized species.

Find even small spots to plant flowers, trees, or grass.



Create food places for insects.



No, nobody wants to live in a too hot city!



6. Support urban wildlife animals

Advantages

- Birds sing and play a crucial role in biodiversity
- Insects find shelter and food
- Coexistence is important for a biological balance



How long is it since you have seen a hedgehog, frog, or caterpillar? Do you know where to look for these animals? If not, you should work on animal liveability.

Plants are attractive not only to birds and insects, animals that we see most often, but also to hundreds of other, smaller and larger representatives of the fauna. We can create our environment friendly for animals. Wild animals often visit our gardens, parks, and streets, looking for shelter and food.

A nature-friendly space can be created by us even in a small area. It is important that it is diverse and has many ecological niches, thanks to which species richness will prevail. The more different plants, the greater the food base and the abundance of animal shelters will be.

Some urban animals are entirely dependent on human habitats.



Biological balance for resilient ecosystem.



Yes, bugs play an important role in biodiversity!



7. Use renewable sources of energy

Advantages

- Investment is cheaper in the life cycle
- Sun is an endless well of energy
- No transportation and political conflicts

Use tramways and trains to commute.



Enjoy the endless source of the sun as fun on the streets.



Oh no! Nobody wants this happening to you. Rather use your muscle power!



When you look outside of your window, can you see infrastructure for renewable energy? If not, think about how you can contribute with your building to produce electricity.

We can invest in renewable energy such as sunlight, wind, tides, plant growth, and geothermal heat. Solar photovoltaic panels can be installed on our roofs or in separate constructions. Even small wind turbines are available for our homes. We can install air source heat pumps - system that use the heat from the outside air to provide us with heating and hot water. Small hydro-electric power plants are options to gain our energy to heat and live. Or we can construct small hybrid electric systems for solar and wind; sources of energy that are endless. It is all about finding new solutions and being independent from others.

8. Limit energy usage

Advantages

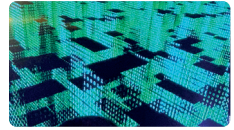
- Smarter is careless
- Digitalisation is your great helper
- You save your money



If you do not know the sum of power costs per month, then you probably do not care enough. Is it possible to select renewable energy from your power provider?

One of the energy priorities is to limit our energy use in total and decrease it of 20 percent. We are all asked to do steps toward CO₂ reduction. Limit electricity use by switching off all devices when they are not in use. We can do even more by using water as cold as we can and furthermore limit water use. We can buy energy efficient products by looking for A+++ energy efficient mark to help energy saving. We can improve energy performance of buildings and isolate walls and the roofs. And we can install programmable thermostats or SMART systems can control the efficiency of heating and cooling.

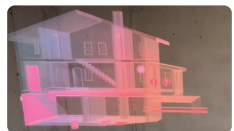
Use efficient led lighting and smart power strips.



Work at home and reduced travelling energy.



Sorry, airplanes, cars and non-isolated houses are no goes!



9. Reduce deforestation for CO₂ storage

Advantages

- The forest stores carbon and regulates the climate
- Trees produce the air we breathe
- Great recreation area for mental health

Forest protects against floods



Deforestation is responsible for 15 percent of the world's global warming.



Is there palm oil in your biscuit? If yes, you should think about responsibility in your shopping bag.

One of the Green Deal strategies is that we stop deforestation. Forests absorb roughly 30 percent of carbon dioxide emissions. The forests take the emissions out of the atmosphere and prevent them from warming the climate. This is important in Europe, but it is even worse in regions tropical forests. We shouldn't not buy products containing palm oil. Read properly what is in your food. Palm oil is included in many food products or hygiene items. But the worst is the impact of biofuel. Unfortunately, production of palm oil and deforestation are closely related. The palm oil deforestation of the rainforests of Latin America, West Africa, and Southeast Asia, brings negative both global and local consequences for tropical wildlife.

No, don't take more wood out of the forest that will grow again!



10. Eat responsibly

Advantages

- Fresh vegetable has more vitamins
- Vegetarian food prevents diseases
- Reduced CO₂ consumption makes you happy



Are you a nerd in exotic fresh food, coming by airplane? If yes, you should think about eating local food and improving your cooking skills.

By a wise selection of food, we can change a lot. Because food coming from the region consumes less energy and travelling costs. We can also reduce meat consumption and make smart food choices with nuts, beans, and other leguminous plants.

Nearly sixty percent of the world's agricultural land is used for beef production. Beef requires more land than meats like chicken and pork to ensure the same amount of the proteins. A simple shift from beef toward chicken or vegetarian proteins reduces the pressure on land and pressure for deforestation. And it is even healthier for us to eat vegetarian.

Grow your own food and enjoy the work in the urban garden.



Reduce your meat consumption and cook with healthy vegetarian proteins.



Sorry, exotic fruits and meat have a far too high CO₂ footprint!





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