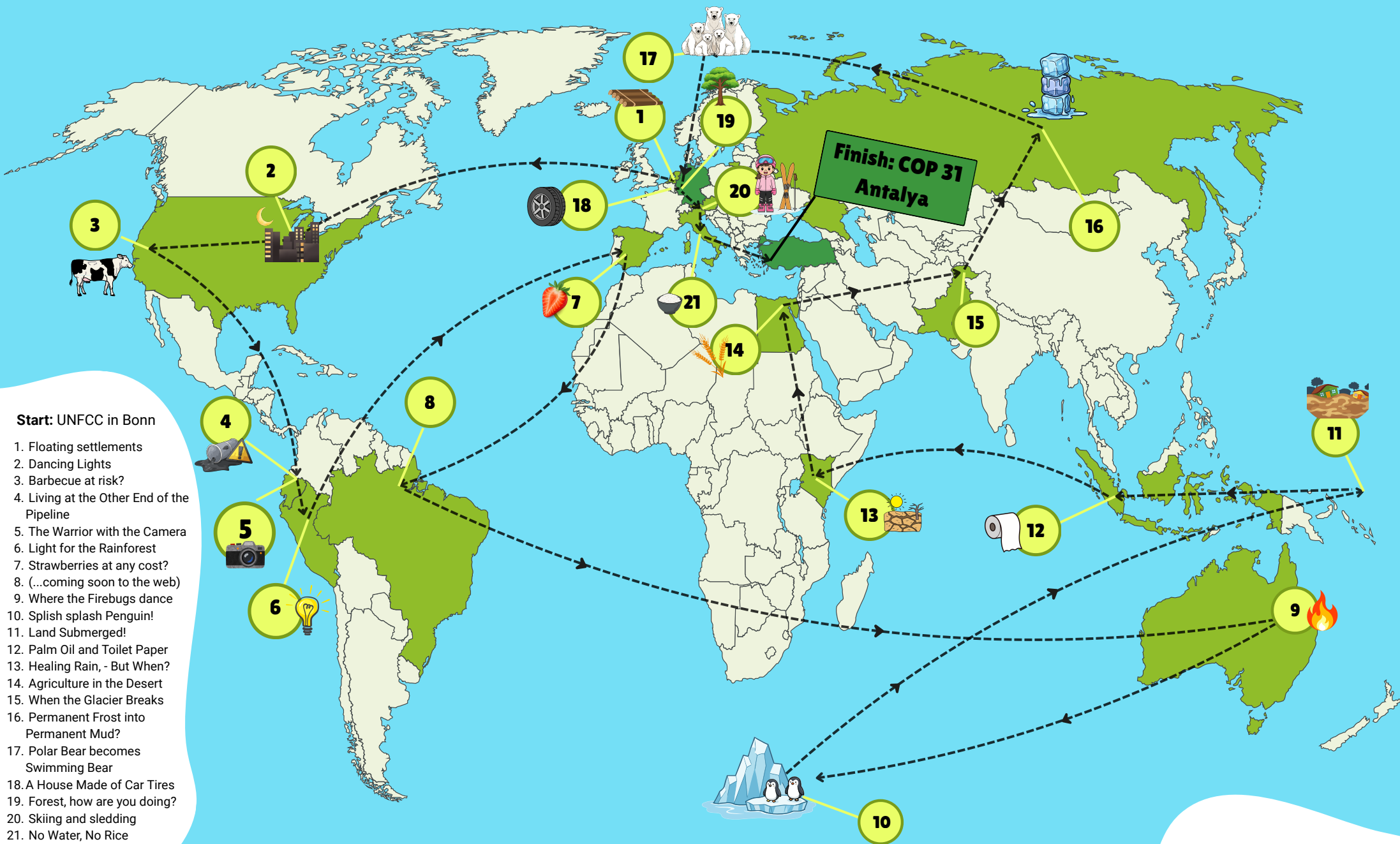




Come with us on our Climate voyage!
We need 102,298 green footprints to reach COP31

Climate Voyage - Stopovers

	Stopover	Place/City	Country	Distance in KM
Start	UNFCCC	Bonn	Germany	
1	Europe	Amsterdam	Netherlands	238
2	North America	Chicago	USA	6.611
3	North America	San Francisco	USA	2.983
4	South America	Pastaza	Ecuador	6.410
5	South America	Pastaza	Ecuador	
6	South America	San Martin	Peru	7.634
7	Europe	National Park Donana	Spain	3.018
8	South America	Manaus	Brazil	5.879
9	Australia	Brisbane	Australia	15.107
10	Antarctica	South Pole	Antarctica	6.953
11	Oceania	Huahine	Tahiti	8.154
12	Souteast Asia	Sumatra	Indonesia	11.763
13	Africa	Mombasa	Kenya	6.940
14	Africa	Bilbeis	Egypt	3.929
15	Africa	Islamabad	Pakistan	5.027
16	Asia	Jakutsk	Russia	6.166
17	Europe	Spitsbergen	Norway	466
18	Europe	Redange sur attert	Luxembourg	203
19	Europe	Taunus / Frankfurt	Germany	376
20	Europe	Innsbruck	Austria	293
21	Europe	Novara	Italy	2074
Finish	COP 31	Antalya	Türkiye	Gesamt: 102.298

ZOOM – Kids on the Move for Climate Action



CLIMATE VOYAGE AROUND THE ONE WORLD



**CLIMATE
ALLIANCE**

Stopovers at a journey around the One World

1. Europe I: Floating Settlements
2. North America I : Dancing Lights
3. North America II: Barbecue in risk?
4. South America I: Living at the Other End of the Pipeline
5. South America II: The Warrior with a Camera
6. South America III: Light for the Rainforest
7. Europe II: Strawberries At Any Costs?
8. South America IV: (... soon on our Website!)
9. Australia: Firebug's Dance
10. The Antarctic: Splish-Splash Penguins!
11. Oceania: Land Submerged!- Even Without a Storm
12. Southeast Asia: Palm Oil and Toilet Paper
13. Africa I: Healing Rain, but When?
14. Africa II: Agriculture in the desert
15. West Asia: When the Glacier Breaks
16. North Asia: Permanent Frost into Permanent Mud?
17. The Arctic: Polar Bear becomes Swimming Bear
18. Europe III: Forest, how are you doing?
19. Europe IV: A house made of car tires
20. Europe V: Skiing and Sledding
21. Europe VI: No water, No Rice



Hello and welcome aboard our Climate Voyage around the One World!

Be prepared - our climate shuttle is just about to leave the city of Bonn!

It will take us on a journey at the speed of thought that leads us to different places all over the world.

At the window of the United Nations Climate Secretariat - from the roof of which we will take off - you see Simon Stiell. He is the head of the secretariat and is seeing us off. At the end of our climate excursion we will meet him again in Belém in Brasil. There, in November, at the 30th UN Climate Conference, we will hand over to him the green footprints collected by children all over Europe.

But first things first: now we are very much looking forward to our nineteen stopovers and all the things we will learn about our global climate. We will gain knowledge about the causes and consequences of climate change, we will listen to people telling us about their everyday problems, and we will look into what it means to polar bears and penguins when the ice melts away.

We wish you a very exciting trip around the globe!

Your Green Footprint-Team at the Climate Alliance

1. Europe I: Floating Settlements

Goedendag! My name is Matty and I live in the Netherlands. Besides endless tulips, bicycles and windmills, there is also a lot of very flat land here. Almost half of it lies less than one metre above sea level - and one quarter less than just 25 cm! These areas must be protected from flooding by huge walls made from earth known as dykes. This was not always the case though: an old saying goes that "God created the world, but the Dutch created Holland". Over the centuries, we have become real champions in reclaiming land from the sea. Every year, we pump ten million cubic metres of sand up from the seabed and spray it onto the beaches along the coast to create new land.

The rise in sea level caused by climate change threatens our entire country if the dykes are not high enough to keep the water out. To ensure that this doesn't happen, we now want to work less against the water and more with it: part of the land is being flooded again to give the water more space. Floating settlements that move up and down with the tides are being built to allow people to continue living there. My uncle already lives in one of the floating houses in IJburg. When we visit him, we are able to go swimming right outside his house in the summer and ice skating in the winter.

The idea has quickly caught on and many towns and cities in coastal regions are also now interested in floating homes. Maybe there will be floating settlements there too one day - after all, major cities such as Tokyo and London cannot simply be moved inland!

Maakt het goed! (Take care!), Matty



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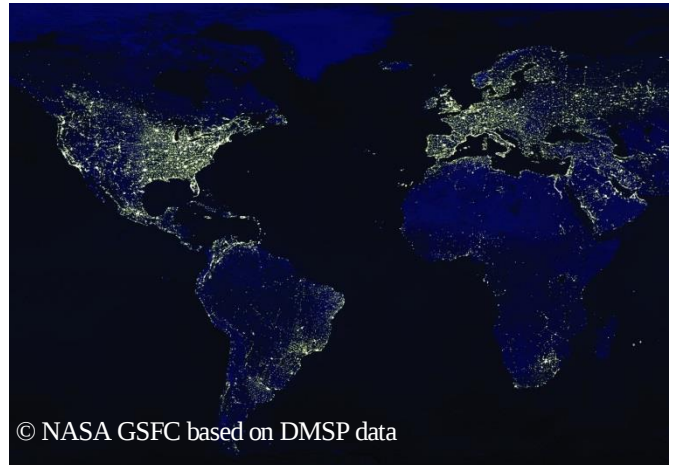


2. North America II: Dancing Lights

The industrial cities in the northern hemisphere use more energy than the countries in the Global South. The photograph of the earth at night gives you a good picture of energy and electricity use in these regions. In North America, on the eastern side, it is especially bright. Europe shines very brightly, too but also has more than twice the people living there.

For many North Americans it is normal to leave lights on when they leave a room. They also love to illuminate their cities with advertisements, and so huge amounts of electricity are used. The electricity is taken from coal and the burning of crude oil, which releases more climate harming CO₂-gasses (carbon dioxide).

The houses are poorly insulated and the heating is not very effective, because heating oil and natural gas are cheap. Also, gasoline is considerably cheaper than in Europe, which is why many people can afford to drive big cars. They often drive long distances; trips to work, a restaurant or a cinema 100 km away are not uncommon. With an SUV needing up to 17 litres for this, you can imagine that this adds up quite quickly! (Here, new cars need on average 6,3 litres per 100 km.)



People in less industrially developed countries complain that the industrial countries only think about their advantages and they don't think about the impact that their behaviour has on people in other countries. Above all, it makes them angry that the USA is the biggest CO₂ producer in the world and does not participate actively enough in the international efforts to stop the global climate change.

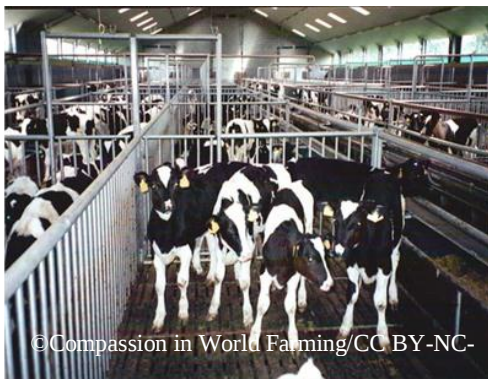
Now that gasoline and energy are becoming more expensive, more people are considering exchanging their "gas guzzling" vehicles for smaller cars and putting better insulation in their houses. But, until the CO₂ balance (the carbon dioxide emissions per capita) is improved, the lights dancing still shows that the energy saving efforts in the northern hemisphere are too little ...



3. North America I: Barbecue in risk?

Is there anything better than a barbecue party in summer? And thanks to the low meat prices, nobody has to go home hungry – no matter how long the guest list is. But is that really a good thing? A look behind the scenes shows: for our planet, especially beef production is actually quite problematic.

Firstly, a lot of the beef on our plates is being imported from South America. But what is primarily harmful to our planet is the cultivation of soy beans which are processed into so-called concentrated feed that our animals here get: 80% of this soy is produced in Brazil. Oftentimes, rainforest is cleared in order to get the necessary acreages, a process during which a lot of CO₂ is released. Finally, everything has to be shipped across the Atlantic Ocean, which once again causes huge CO₂-emissions...



Most people are not really aware of these things and simply enjoy the fact that they're able to eat beef and meat whenever they want to. But to cover this demand, massive numbers of animals are needed. Another problem here is that cows in particular produce methane during their digestion: methane is a greenhouse gas whose effect is 25 times stronger than that of CO₂! Also, the animals often have to live under horrible conditions in those large farms.

Now - what does all of this mean for our barbecue party? Don't worry; it won't have to be cancelled. But next time, why don't you try grilling some bell peppers, courgettes or corn on the cob? It tastes amazing, you'll see! And if you really want to have some meat as well, check if there's a local, small farm close by where the animals are treated well and fed on regular, domestic grass – you'll be able to taste a difference!



One last tip: have you ever paid attention to where your barbecue coal comes from?

4. South America III: Living at the Other End of the Pipeline

The burning of crude oil releases a large amount of CO₂ and other gases into the air -in addition to the many other problems created during crude oil production. Silvia Marcelia Tibi lives in a region where crude oil is produced. Her father belongs to the Shuar people, her mother to the Kichwa people. Silvia is married and has three daughters. We talked with her about her life in the Amazon rain forest.



Alli puncha – Hello Silvia. Where in Ecuador do you live?

The name of my community is Yana Marú and 80 people live there. Yana is near the bank of the river Pastaza. There is one street and busses can drive there. You can also go boating where I live. Many children live here, but there is no school yet in Yana. The next school is 3km away. The lessons are taught in Spanish. Sometimes an Indian teacher gives lessons. This is a big advantage, because they can speak Kichwa and are able to help the children become bilingual.

Yana Marú lies in a region where crude oil is produced. What does this fact mean for your village?

Mainly we are annoyed by the noise created by the people, explosions and helicopters! Not far from here is a waterfall. Just 15 years ago this place was very mystical. Today, the spirit has left because it is too loud. My family tries to protect the rain forest, but there are many problems. A lot of people in the community exploit wood and other things, for example medical plants. Sometimes scientists come here and dig everything out. They took plants from here, processed them and sold the plants under a different name!

Today you can also not go hunting. Okay, we have fish and all that, but recently we had accidents where crude oil leaked. Smaller rivers and lakes were contaminated. For four years there were no fish and no life. We had a big demonstration, but it is not enough to just tell them to go elsewhere. If so, other people would suffer from the crude oil - this is no solution.

**Thank you very much and
Kayakaman – See you soon!**



5. South America II: The warrior with the camera

Sarayaku is an area comprising five Kichwa Indian municipalities on the Bobonaza river in the Amazon rainforest of Ecuador. Many endangered species like the tapir, the three-toed sloth and the rainbow toucan live here as well. The people of Sarayaku are known throughout Amazonia for standing up against the exploitation of their forests by oil companies. They say their ancestors and the Yachak, their shamans, bequeathed them the 135,000 acre area. They want the oil to remain in the grounds of the Amazon.

Eriberto Gualinga is a Sarayaku warrior. Instead of a bow and arrow, his weapons are a camera, a microphone and a Twitter account. In short videos, he tries to give a voice to all the creatures of the forest, pointing to the destruction of the rainforest and our unending hunger for resources. He also films the life of the Kichwa Indians and documents their legal battles against oil companies.

"My work began in 2002 when I documented conflicts with the oil companies and the military as they invaded our territory to conduct exploratory drilling. Back then we launched a website because we wanted to defend ourselves against false information from the outside and to present our views. Since then, I document everything we do with the camera so that others can resist like we did. My films have already achieved much, especially in other villages that share our problems but are still in doubt about what they should do. That's a good feeling."

We in Sarayaku feel very connected to our culture, our traditions and Pachamama. We believe that we can't be who we are without the spirits of the forests, the rivers and the mountains. We know that the Amazon is much more valuable than oil. For us, the forest is life. Its importance cannot be reduced to money alone!"



Learning from the Global South: Eriberto wants to prevent the forests, the lungs of the earth, from being forever destroyed due to short-term economic interests. Therefore, he is traveling through Europe in 2015 to advise us how to treat Pachamama, our Mother Earth, with more respect just as the indigenous peoples of the Amazon have done for hundreds of years. For them, the rainforest is their church, their supermarket, their garden, their pharmacy and their building supplies store – it is the center of their lives.

6. South America I: Light for the Rainforest

Today, a very high percentage of people have access to electricity worldwide, in Peru it is about 95% of the population. Nevertheless, there are some places where it is still very difficult to get it, such as in the deep Amazon forest, where indigenous people live.

Hola, I'm Pepe of the people of the Cocama and I live in San Martín in the "Reserva Nacional Pacaya-Samiria", a national park. Our village is only reachable by ship. To Iquitos, the next large city, it's 7-8 hours by speedboat, but that's expensive. Here the sun rises at 6 a.m. and at 6 p.m. everything is dark. In our houses we have so far mainly oil lamps. But they smell and produce soot; apart from them there is no good light.



© Climate Alliance

Recently we've gotten mobile LED Solar lamps. Their light is brighter and better for the environment. And we don't have to buy the expensive petroleum!

The lamp's batteries are charged during the day with a small solar module (3 watts) or with a charging station (40 watts) that charges 10 lamps. Each gives off light for 6-8 hours. More and more people come from other villages and ask how they can also get such lamps.



© Climate Alliance

We got our lamp from the AIDSESEP, an Indigenous Organisation in Peru. But we must also do something in return: the children in my school collected the garbage between the houses and banks of the river Samiria in big sacks for a whole afternoon and brought it to the waste collection station - all together there was quite a lot. That's because of the strong high water, which left many plastic bags and water bottles under our stilt houses.

Our waste is brought to the landfill in Nauta with a load boat. Unfortunately for some people this is too expensive, which is why even more garbage is thrown into the rivers and creates problems for manatees (sea cows), sotalias (river dolphins) and other river dwellers.

I've heard you separate your waste - why?

**Adiós por ahora - bye for now
Pepe**



© Climate Alliance

7. Europe II: Strawberries At Any Costs?

Spain is the world's biggest strawberry exporter. 90% of its strawberry production is concentrated in the area between the provinces of Huelva and Seville, where the national UNESCO Park Doñana is. Now, the park is seriously endangered due to uncontrolled water exploitation and climate change.



¡Hola! (Hello!) I'm Marisol and I live in Spain, in the province of Seville, Andalucía. The region I live in is quite important in Spain, because of the strawberry greenhouses. I love strawberries; they are my favourite fruits! They're sweet and tasty, but they need a lot of water and energy to be cultivated.



Close to us there is the UNESCO national park Doñana. Coto de Doñana, as we say, was Spain's most important wetland. It is home to several animal species. Some are typical for Spain, some even in danger of extinction. And also many migratory birds from Africa live here. When I visited the park the last time, I saw the Iberian lynx, an endangered species!

It might sound odd to you, but there is actually a connection between the Doñana wetlands and strawberries: Since the 1980s, companies have taken more and more water from the Doñana wetlands to water strawberries and many other agricultural products in their greenhouses. This is not only often illegal, but also drying up the national park. In conjunction with global warming it has already happened that the park ran out of water. For this reason, more and more animal species are endangered or even disappearing, and the park could also lose its UNESCO World Heritage title.

The European Commission has accused the Spanish government of not doing enough to protect Coto de Doñana and its fauna. It has also been brought to the European Court of Justice. Now, the Spanish government has a plan to restore the park and protect it, but the problem of illegal water exploitation remains. The companies keep taking water from the park because people like to eat fresh strawberries all year long instead of just buying them during their season and from their own country. This is something I don't understand. Strawberries are tastier when they're seasonal and local, and they also need fewer resources to be cultivated!



¡Adiós! (Bye!) Yours, Marisol.

9. Australia: Where the Firebugs Dance

Australia is the driest inhabited continent. It rains very seldom and irregularly. The long dry seasons and times with severe floods are normal there. Climate scientists are worried now that both periods of drought and flooding will exacerbate with climate change. In the inland many people gave up farming because the water is even scarcer than it used to be.



Hello, my name is Kyle and I live in Brisbane, a big city in the east of Australia.

I like to go to school by bike, although temperatures can get up to 50° C in the shade in summer (which is during winter where you live). Our classroom has air conditioning, but this needs electricity, of course. The power is produced in coal-fired power stations, which release a lot of CO₂ and increases the effects of global warming.

In the last years, it has been terribly hot and dry, and everything has withered. Due to the drought, there are more and more bush fires. A couple of years ago, nobody really noticed because small wild

fires in summer are common around here - many plants even need them to grow. Today, however, there are more and more heavy fires because large amounts of dry materials gather. Last year, an area as big as 8,400 soccer pitches burnt down in a national park - there was smoke and flames everywhere!

In some areas, it hasn't properly rained in years. Only muddy broth comes out of the tap, so everyone has to buy water which is very expensive! In the cities, the water was so scarce in summer that it was forbidden to water your plants! At the same time, my uncle came to visit because there were such heavy floodings where he lived. He told me that illnesses spread easily because of all the dirty water. It's so weird to think that people here either have way too little, or way too much water!

Well, see ya down under! Yours Kyle



10. The Antarctic: Splish Splash Penguin

The Antarctic – also called South Pole – is a nearly untouched wilderness at the end of the world. As far as the eye can see there is only ice, snow, mountains and glaciers. It's the coldest place on earth and the temperature can sink to -90°C !

Only a few people live in Antarctica. Most of them are scientists that investigate climate change. They found out that the west side of the Antarctic is warming up considerably. Keep in mind that penguins in Antarctica live above ground on the packed ice. However, often it is so windy that the sea cannot freeze. Now, instead of packed ice, there are only sheets of ice. The penguins need the ice to rest and to hide from predators, such as the hungry leopard seal.



Sometimes, the blowing wind can quickly close up gaps between the ice sheets. This is often very bad for the young penguins living on the coast because their parents, who were off widely searching for food, return home and cannot find their babies because of the newly formed ice. Many young penguins starve to death. A few attempt to find their own path to the sea. But numerous sea birds lurk over the sea as their favourite food is baby penguins. Only about half of the baby penguins survive their first year.

If the water keeps getting warmer, the krill (small crabs) and fish, the favourite food of penguins, will retreat deeper into the sea in search of colder water. Because of this, penguins must search for new homes. Unfortunately, many areas have already been taken by other penguin colonies. The more penguins that live in an area, the less krill and fish there is, so penguins are forced to swim further out into the ocean to satisfy their hunger...



11. Oceania: Land Submerged! – Even Without a Storm

In the Pacific, many islanders suffer from the global warming. The islands are getting smaller because of the rising sea level. Due to the frequent storms, there are more landslides on the coast and drinking water mixes with salt water. Some islands are running out of food because sweet potatoes and other vegetables cannot grow on the land because it is too salty. Sharks and stingrays are sometimes found swimming in the fields after severe floods.

Dario Schwörer is a mountain guide in the Swiss Alps. In 2009 he was sailing with his wife Sabine and his two children through the Pacific for the "Top to Top-Global Climate Expedition". They visited schools there and told the children about the climate change. The following report Dario sent us about a school visit on Huahine:



Iaora (Hello)! In beginning of June we visited a school in Fare on Huahine, an island that belongs to Tahiti. To get there we had to sail for 24 hours from Papeete. Papeete is the capital of French Polynesia and is located on Tahiti Island.

The next day we explored a little bit of the island and enjoyed the wonderful flowers and the blue-eyed eels living in a little river. Sometimes we saw traditional island houses with solar panels on the roof to heat water, this is a good example of how the abundance of solar energy in the South Pacific can be used.

In the schools we talked to the students about problems of the climate change and what we could do to change it. When Sabine wanted to explain how solar cells work, the sun hid behind clouds, so there was not enough power to drive the solar mobile that we brought.

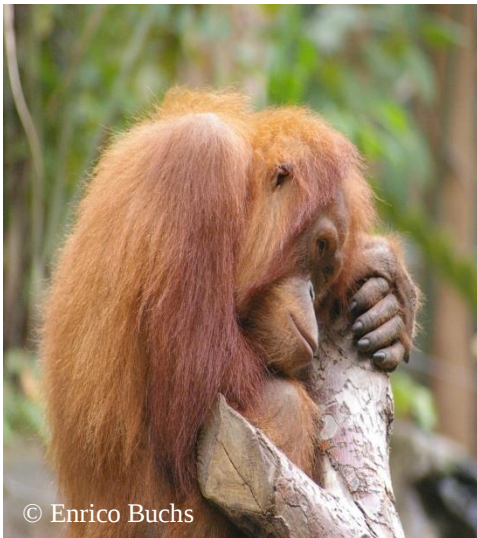


Nevertheless, the children were so impressed by our sporty little solar car that we decided to give it to their school.

Na na! (See you soon!) Yours Dario

12. Southeast Asia: Palm Oil and Toilet Paper from the Rainforest

In Germany, one can buy recycled paper everywhere (it is marked with the Blue Angel) – it is just as smooth and soft as regular paper. Nevertheless, only 24% of the people buy it! Also, the proportion of old paper used for the production of recycled paper has shrunk by 20%! This means that the majority of our hygienic paper (toilet paper or tissues) is made from so called fresh pulp fibre – it is taken directly from wood from the forests.



© Enrico Buchs

But what does this have to do with Southern Asia, Orangutans and Sumatra Tigers? Their homes are in the rainforests in the 14, 000 Indonesian islands. Many large mammals that live in the rainforests don't live anywhere else, such as Java and Sumatra Rhinos, Sumatra Elephants and naturally, Sumatra Tigers and Orangutans.

Rainforests are often called the green lungs of our Earth. They provide us with oxygen and are large conservers of carbon dioxide and water. Therefore, the rainforests play an important role in our climate and environment.

Soon there may not be any more forests in Indonesia. If there are no forests, the Sumatra Tiger would not be able to hunt anymore. Currently, every minute that passes a forest the size of a soccer field is being cut down.

Every year, the Indonesian paper industry produces about 14 million tons of paper. For this, huge amounts of wood are needed, 70% of which comes from rainforests. Since 2011, for environmental reasons, it is prohibited to cut down rainforest areas in Indonesia, but it happens anyways – illegally.

The rainforests are not only cut down for paper though: they're also burnt down to create palm oil plantations. The palm oil is shipped to Europe and used for foods such

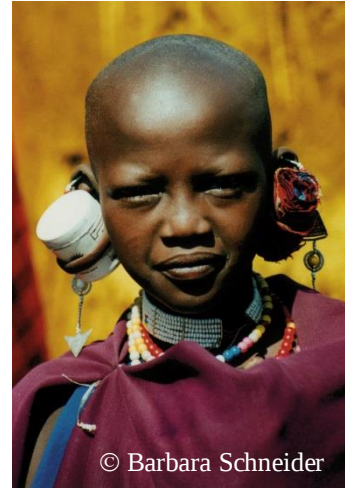
as margarine, chocolate bars, soups and ice cream. It is also used in laundry detergents, shower gels, and many other skin care products – the EU is the largest palm oil importer in the world! The oil is also processed into bio-fuel because our acres are not big enough to produce sufficient amounts of rapeseed oil. Though the EU has decided in 2018 that this should end, it is not very likely to happen before 2030.



© Climate Alliance

13. Africa: Healing Rain – But When?

Supa! (Hello!) My name is Esiankiki and I am a Massai girl. I live in a little village with cottages made out of clay and cow dung in southern Kenya. Our village is enclosed by bushes with thorns that protect us against wild animals. We have a little cattle herd, a few goats and some sheep. My brothers tend the animals, every day they go with the animals to drinking holes. They have to walk very far because the drinking holes near the village are dried up. Since there isn't very much water left, many animals have died of thirst. This makes my father very sad. The animals are very important for us because we cannot plant fruits or vegetables – the land is too dry for that.



© Barbara Schneider



© PixelQuelle.de

Sometimes it does not rain a drop for months. Drinking water is very rare. At night my mother and I often walk to drinking holes that are far away.

The way back is very hard and dangerous. We carry the heavy water jars on our heads. Unfortunately, the water we bring to the village is very dirty. Many children get diarrhoea and stomach cramps.

Not all children of our village get to go to school. Most of them stay at home and help their parents with work or they are too sick to go to school because of the dirty water.

Because of water is rare and precious in our country, there was an armed conflict between the Massai and the Gikuyu people. Many people were hurt or killed. To improve the situation, a well and a watering place for our animals should be built. If this works out, I would not have to walk so far to get water. And I could go to school more often – that would be great...

Sere! (Bye), Yours Esiankiki



© PixelQuelle.de

14. Africa II: Agriculture in the desert

More than 95% of Egypt's surface is desert. Almost all 100 million inhabitants live close to the fertile land near the river Nile - Egypt's lifeline. The population grows by about 2.5 million people a year, which means the need for water and food is also increasing rapidly. As it hardly ever rains, farming is difficult and more and more fruitful land is being lost. At the same time, there are more and more efforts to revegetate the desert.

مرحبا (marhaban / hello!) My name is Mostafa, my family and I live in a small village in the north of Egypt, close to Bilbeis. My parents work for an initiative called SEKEM. On its large farm, many different plants are grown and you can find chickens, goats and cows. My father told me that 50 years ago, all the fields were nothing but unfertile desert. At that time, the founder of SEKEM had bought a large piece of desert and worked the soil. Today fruit, vegetables, herbs and even trees grow where there was nothing but sand back then. Isn't that great?!



The farmers of SEKEM cultivate their fields biodynamically. For them, animals, plants and soils are parts of a single system, which needs to be treated particularly carefully and in an environmentally friendly way.

They are very proud of not using chemical fertilizers or pesticides (toxic plant protection products). Instead, they use compost and special biodynamic methods to improve soil and build up humus.

Compared to conventional farmers, SEKEM's harvest is even better in the long run. So it has become a role model for many farms in Egypt!

The initiative is not only doing farming, but promoting a sustainable development of Egypt, meaning a change that is good for individuals, our society and the earth in the long run. Here everyone can develop his/her abilities and use them for the good of all.

In SEKEM we also have a medical centre, a kindergarten and a school. I like going to school because besides normal subjects, we have interesting classes like pottery, carving and drama. I like that a lot!

إلى اللقاء (iilaa alliqa' / See you!), Mostafa



15. Sout Asia: When the Glaciar Breaks

Pakistan has over 7,000 glaciers, which is why it is also called the “Third Pole”. These glaciers supply millions of people with water. But climate change is making them melt faster and faster. When meltwater builds up behind ice or rock barriers and suddenly breaks through, a glacial lake outburst flood occurs – a wall of water that races down the mountain in just a few minutes!

Hello! My name is Amina, I am 9 years old, and I live in Hassanabad in the Hunza Valley, high up in the mountains. Our village lies just 5 km below the mighty Shishper Glacier, an ice stream that is 1,300 m wide and 600 m high. My family has lived here for 400 years. We grow delicious apricots (Hunza has over 50 varieties), cherries, potatoes and wheat. We also keep yaks, goats and sheep, which provide us with milk and warm wool.



© Mehtab Farooq auf unsplash.com



© Shakeel Ahmad auf unsplash.com

On 7 May 2022, disaster struck. A lake behind the glacier suddenly burst through! The water rushed down so fast that it destroyed our bridge connecting Pakistan with China, washed away hundreds of apricot trees, damaged many houses and knocked out two power stations. One villager told me: “Our water channel system was completely swept away. We now have no drinking water!” Schools had to close because bridges were washed away –

some children now walk over an hour longer to get to school!

My uncle Tariq looks after the early warning system at the glacier. The cameras and sensors monitor the water level around the clock. When it rises dangerously, sirens wail and everyone gets a message on their mobile phone. Then there are only 15-30 minutes left to get to safety – in 2022, that was enough to evacuate everyone in time before the flood. Neighbours warned each other, helped to evacuate children and elderly people, and shared food and blankets.

Our ancestors are buried here, and we too are staying to protect our home. We are helped by eight ice stupas, which are essentially artificial mini glaciers. In winter, we spray water into the air like a fountain. The cold turns it into tall ice cones in which we can store up to 20 million litres of water. In spring, they slowly melt and provide farmers with water for sowing in the fields.



Auf Wiedersehen! Eure Amina

16. North Asia: Permanent Frost into Permanent Mud?

North Asia includes a large area that you might know as Siberia. A large part of Siberia belongs to Russia. Hot summers (up to $+40^{\circ}\text{C}$) are being replaced by extremely cold winters (to -70°C). It often snows 9 months out of the year.

In many regions, the ground is completely frozen - scientists call this permafrost. In many places the ground has already been frozen for many thousands of years, sometimes up to 1km deep! Now, in the warm summer months, some of the surface thaws. This has created a large amount of swamps and marshes. These wet areas have produced billions of flies and mosquitoes, which are a big nuisance to animals and humans.



© U.S. Geological Survey,



© bopohex.

It creates a problem in Siberia when the earth is frozen deeply and then softened quickly, because it is difficult to safely construct roads and houses. This is why buildings are being constructed on piles of deep earth that are known for staying frozen for the entire year.

Climatologists now fear that there is more thawing of the permafrost in summers than there ever was before. Roads and houses that were not built on the deeply frozen earth could sink into the "permamud". In Jakutsk, a city in

eastern Russia, many buildings are in danger of collapse because of this freezing and thawing.

Also, the railroad and electricity lines have been built on the permafrost. Experts are warning that the worst damage could be to the crude oil and gas pipelines. In the deserted and inaccessible areas of Taiga and Tundra, it could take a long time to locate and patch a leak.

Many climatologists say that if the permafrost continues to thaw, large quantities of the greenhouse gasses carbon dioxide and methane that are associated with the last ice age will be released. Satellite data shows that the lake areas in Siberia have increased by 12% in the last 30 years. Places where before there had been nothing but Tundra, are now covered by water, from which methane bubbles.

The Russian Government hopes that due to the permafrost thawing in southern Siberia, new land for grain production will be created for the northern hemisphere.

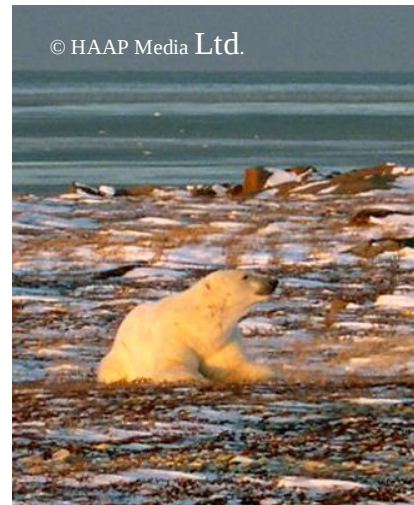


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17. The Arctic: Polar Bear Becomes Swimming Bear

The Arctic - or the North Pole - is the kingdom of the polar bear. He is one of the biggest carnivorous animals. In winter he lives on packed ice - ice that floats on the sea - and hunts seals. He eats a lot to build up fat reserves. In the summer he often starves for months at a time. Then he lives on the continent because the packed ice melts. The polar bear is only a successful hunter while living on the packed ice. Seals are too fast for him in the water.

But his living space is literally melting away under his feet due to the climate change; the temperature of the Arctic has risen by 5° Celsius during the last 100 years. And because of this, the packed ice is getting thinner and thinner. Lately, in the spring the ice has been melting much earlier than usually does and it is freezing much later in the autumn.



This creates a lot of problems for the polar bear. The earlier the packed ice melts, the less he can eat to build up his fat reserves. At this rate, many polar bears will die of hunger during the ice free periods. This is especially bad for the polar bear's babies. Only every second baby survives the summer.

Because the ice can be very thin in the winter, it is not strong enough to support the heavy polar bear. In some places the packed ice collapses due to the polar bear's weight. Since they cannot stand on the ice it is getting more and more difficult to hunt seals.

Climate change is a big problem for the polar bear as there are more rainstorms. Due to this, the glacial caves the polar bears give birth to their cubs in can collapse. Both the mother and cub can be hurt or even killed.

If climatologists are right and the Arctic will be ice free in summer by the end of this century, polar bears will become extinct...



18. Europe V: Forest, how are you doing?

Hello!

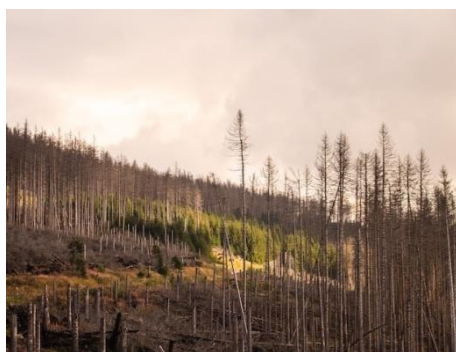
I'm Lea, a forester in the Taunus, a German low mountain range. My team and I make sure the forest and the animals living in it are doing well, and we also make sure there's enough wood for furniture and houses. Maybe you're sitting on a wooden chair right now!?



100,000 years ago, Germany was mostly covered in forests, mainly dominated by European beech trees, which have smooth bark and deep roots and provide excellent shade with their leaves. But today, you can find pine trees in many places, which typically grow at higher altitudes in the mountains where it's too cold for other types of trees. These pine trees, with their straight trunks and rapid growth,

have been planted by humans in many areas, often away from other types of trees.

This means that forests are often not as natural as we might guess. Most of them are managed for forestry purposes, which involves cutting down the trees after a certain period and selling the logs. This logging process can be noisy and disturb many animals, significantly altering the forest environment. However, it's important to note that from wood, we can make an important renewable resource that is far more environmentally friendly than materials like plastic or concrete.



Due to climate change, our summers are getting hotter and drier. This isn't good for the planted pine trees as they can't handle these conditions, and their ability to defend themselves is decreasing. Wood-eating insects like the bark beetle, which happens to love pine trees, love this weather. As a result, the beetle population is growing rapidly, causing many trees to die. Additionally, because of climate change, the risk of forest fires is increasing. This is a major concern for us foresters. To ensure that we have healthy forests in the future, researchers all over the world are studying which tree types can survive climate change and its consequences.

We'll meet you in the woods! Yours, Lea!!

19. Europe VI: A house made of car tires

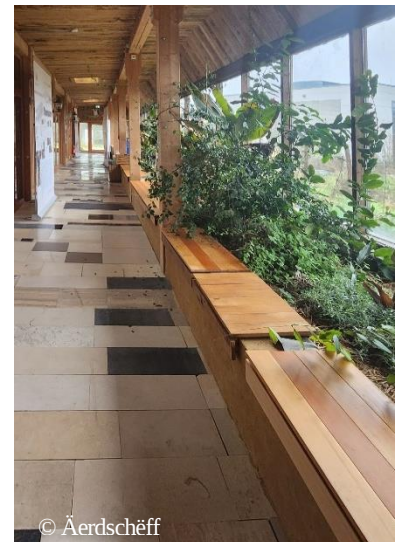
The construction of new buildings is very harmful to the climate and causes lots of greenhouse gas emissions. To change this, an American architect has come up with a construction method that is as environmentally friendly as possible in 1970. One such special building, which he called "Earthship," is located in Luxembourg, one of the smallest countries in Europe.



Moien from Lëtzebuerg. This is our "Äerdschëff", what is earthship in lëtzebuergesch, our national language. It may look a little different from your home. That's because we've used almost only recycled and reusable materials that don't have to be transported from far away. The back wall is made from 1000 old car tires, which also saves concrete and is therefore much more environmentally friendly.

Using things in a way so that they can be used again and again is called circularity. If something breaks, it is repaired or rebuilt instead of simply being thrown away. The floor panels on the right are also various leftover pieces from other buildings. They make a nice pattern.

Did you notice the large windows? This not only provides a lot of light, but also allows the sun to shine in almost all day. It warms the interior when the weather is good so that no extra heating is needed. As there are only windows at the front and cool air can come in from the ground through tubes, it still doesn't get too hot. The solar system installed on the roof also uses the sunlight to generate electricity.



One goal of the Äerdschëff is to be as self-sufficient as possible. This includes collecting and cleaning rainwater so that it can be used to flush toilets, water plants or even as drinking water. We also grow our own fruits and vegetables in the large garden.

And because our Äerdschëff is not used as a home, it is a place where everyone can learn about sustainability and circular economy, regardless of age, origin or place of residence. Maybe you come visit us one day?

Äddi (goodbye), your Äerdschëff team!

20. Europe IV: Skiing and Sledding

Hallo (Hello), my name is Katharina and I really love snowboarding and skiing. I also like sledding. How about you?

During the last winter holidays, my family and I went skiing in Austria. The mountains were around 2500 meters above sea level. Because there was not enough snow, the slopes had to be covered nearly all day and night with artificial snow from snow-cannons. Snow-cannons need a lot of energy and they cost a lot of money. The artificial snow is also much heavier and harder to ski on.



© Climate Alliance

Where I live it only snows for a few hours in winter. There is hardly enough snow to build a snowman! It is also impossible to even think about sledding or snowboarding.



© PixelQuelle.de

My grandmother lives in southern Germany and she told me that when she was a child sometimes she didn't have to go school during the winter because of all the snow. There was so much snow during the winters that the streets could not be cleared in time. Have you ever experienced something like that?

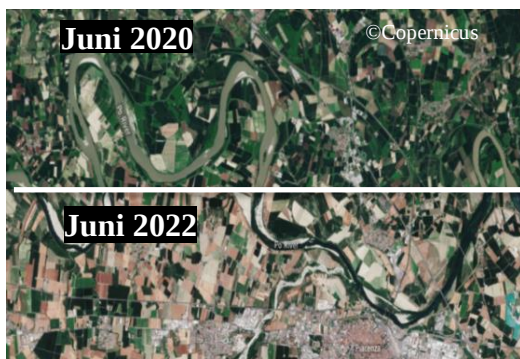
My father says that in a few years, snow will only be on top of the mountains, and even then it will only be there for just a few days or weeks. He says the glaciers in the Alps will not last much longer if the world keeps warming up.

Tschüß! (Bye), Yours Katharina

21. Europe III: No Water, No Rice

The Po Valley in Northern Italy is extremely important for Italian agriculture. Mostly grain and rice is growing there. Italy is exporting different varieties of rice all over Europe and some of them are unique. Now, the rice agriculture in the Po Valley is in danger due to extreme droughts and floods caused by climate change.

Ciao! (Hi!) My name is Tommaso, I live in the Po Valley close to Novara. Here many farmers are growing rice. Together with the areas of Vercelli and Pavia, they produce 90% of the rice grown in Italy. So rice is fundamental for the economy and employs lots of people. However, planting rice needs lots of water, which we don't have due to extreme droughts.



In 2022/2023 it has reached its worst in history: almost no meltwater from the mountains and areas without rainfall for more than 100 days! This caused a severe drought in the whole Po valley, leaving space to big squares of dry sand. Mayors even limited water consumption for their citizens: no drinking water for private pools and car washing, even hair washing at hairdressers got limited!

Unfortunately, the droughts in North Italy were followed by heavy rains that lead to floods. Many people lost their homes. Also a friend of mine had to be evacuated by a helicopter.

Another reason why Italy is struggling with water (besides the climate crisis) is that water pipelines are old and leak. Specialists say that we lose around 40% of water because of old pipelines! Now, the government has a plan to renovate pipelines and save water in the long term, so let's hope it's not too late for action already!

Climate change and its effects are difficult to predict, so even with new water pipelines we don't know when this terrible situation in Northern Italy is going to end!



Buon viaggio! (Have a nice journey!) Yours, Tommaso

Here we are: our journey around the world has ended!

The climate mobile has landed in Antalya, Turkey. Here, at the 31st UN Climate Conference, politicians will be discussing all the problems we have encountered on our trip. As you have seen, we are not treating our planet very well – and this has to change! Ensuring this is the job of politicians from all over the world who meet here to come up with solutions together.

You probably understand that this is not an easy task at all – just think of how difficult it can even be to just divide something up between your classmates: it mostly ends in a fight. On the political level, this is even more complicated because every country has its own interests, and these often contradict each other. And there are many more countries than students – 195 to be precise!



Since almost thirty years, the politicians meet each year to talk about what needs to be done in order to protect our environment. In 2015, they all signed an agreement in Paris, in which every country committed to reach certain goals.

Unfortunately, though, not all of them are keeping their word. And this is where your Green Footprints come in!

They are meant to remind politicians of their promises, just like the demonstrations of "Fridays for future" are supposed to be a reminder to the respective politicians in their cities and municipalities.

Tell us about your ideas and the actions you have taken to protect our climate! Write us an email at zoom@climatealliance.org or send us a letter to the address below.

***The Green Footprints -Team
at the Climate Alliance***

www.zoom-kidsforclimate.eu

Zoom – Kids on the Move for Climate Action is a campaign of



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Questions and tasks on stations of the climate voyage



The real-life and personal examples of the Climate World Journey offer a good opportunity to introduce individual aspects of the complex topics of climate change, causes and effects.
In addition, we have compiled work tasks for some of the journey stops.

Our main concern, as always, is to support you in the best possible way in your so important work with the children.
Therefore, we are happy to add more ideas and tasks to the collection that you have successfully tested or adapt existing ones according to your recommendations.

Send us your comments at

zoom@climatealliance.org.

(please include the details under which we may publish them)

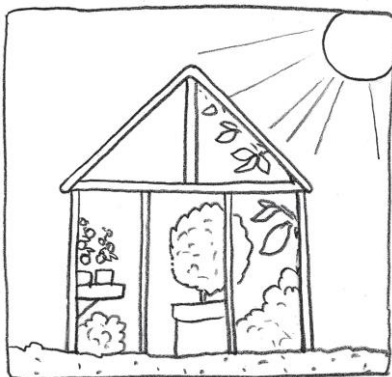
Tip: Read out individual stations of the climate journey as part of a read-aloud breakfast break.

This way, questions that arise can be discussed directly and tasks can be worked on in the following lesson.

Questions and tasks: Antarctic

For the younger ones

- 📖 Have you already discovered Antarctica on the world map? It is located so far south that it can often only be discovered on a globe. Antarctica is a large island where the southernmost point of the Earth is located, the so-called South Pole.
- 📖 Why are there no cities in Antarctica? What do the people who live in the settlements do?
- 📖 What is the favourite food of penguins and why is it less?



Tip: The consequences of the greenhouse effect can be seen clearly in Antarctica. In the accompanying booklet you can read how to investigate the greenhouse effect in an experiment (accompanying booklet module 32 and worksheet page 55).

For the older ones

- 📖 *When was Antarctica discovered? Who was the first person to reach the South Pole in 1911?*
In 1820, Antarctica was sighted from a ship for the first time. On 14 December 1911, Roald Amundsen and a Norwegian expedition were the first to reach the South Pole. He and all his companions died due to the severe cold.
- 📖 *What is pack ice and how does it form? Why does the sea freeze over when there is no wind?*
Pack ice consists of densely arranged ice floes. These floes push over and under each other with the ocean current. The ice then becomes very dense.
- 📖 *Why do the penguin parents no longer find their way back to the breeding grounds of their young?*

Task: Why is it so cold in Antarctica, even though this large island lies in the south? You can find the answer by pointing a beam of light at the equator on a globe. How much light reaches the top or the bottom?

Questions and tasks: Africa (Kenya)

For the younger ones

- 🔦 Why is there no water in the village where Esiankiki lives?
- 🔦 Where does the water for people and animals come from? Who fetches the water and how is it transported? Try to carry a container of water on your head.
- 🔦 Why don't all the children in Esiankiki's village go to school?
- 🔦 Why do the Maasai use thorn bushes instead of barbed wire to protect their village against wild animals? Do you know any thorn hedges in your neighbourhood and have you ever tried to slip through them?



Tip: In Kenya, many houses are built of clay. Earth paints can also be made from clay. You can read about how to do this in the teaching guide (page 39, module 58).

For the older ones

- 🔦 Why can't the Maasai grow vegetables and fruit?
- 🔦 *With whom was there a dispute over the scarce water? What were the consequences? How could the situation be improved and water brought to the village?*
A well would provide the village of Esiankiki with drinking water. It would save the inhabitants a lot of effort and time. When building a well, one has to be careful not to drill too deep. Otherwise, it can happen that too much groundwater is extracted from the soil and soon there is no more water in the well.
- 🔦 Why do people in Africa build their houses out of clay?
What happens when it rains?
Clay is a cheap raw material, of which there is a lot in Africa. Clay regulates the temperature in the house. It is cooler during the day and warmer at night than outside. Every time after the rainy season, the big repair begins, because the rain masses wear away some of the clay.

Task: Fill water and some soil into a shallow bowl and put it in the sun for two days. What happens? Think about how you could build a small house out of clay

Questions and tasks: South East Asia

For the younger ones

- What do people in Southeast Asia do with wood from the rainforests and why?
- What is recycled paper made of? What can be made from it?

Recycled paper is made from paper, cardboard or carton that has already been used. No new wood has to be cleared for this. It takes less energy and water to make recycled paper than it does to make new paper. Recycled paper can be used for writing and painting. But it can also be used to make hygiene paper, for example kitchen paper, toilet paper or handkerchiefs.
- What can you use instead of tissues to blow your nose?

Task: Can you make your own paper and what do you need? How long did it take you to make one sheet of paper? (We explain how you can make your own paper in the information sheet 'Eco-Fair Procurement').

Tip: In Southeast Asia, a lot of rainforest is cleared to grow oil palms. Oil palms are used to produce palm oil. Further explanations about products containing palm oil see teaching guide page 31, module 51.

For the older ones

- 🦋 What is cellulose and what is it made from?
- 🦋 Why are rainforests called the 'green lungs of earth'? Why is it so important to preserve the rainforests? The plants of the rainforest produce oxygen. In addition, the wood stores CO₂. The rainforests help to cool the earth's atmosphere. This is because there is a huge cloud cover above the warm, humid jungle that blocks the sun's rays.
- 🦋 What is the reason why large pieces of forest are not only cut off, but also burned down??

Task: Read the ingredients of margarine, chocolate bars or ice cream and find out if they contain palm oil. Also check your bathroom to see if shampoo, shower gel and other cosmetics contain palm oil.



Questions and tasks: Australia

For the younger ones

- 🔦 What are the schools doing to prevent heat in Australia?
- 🔦 What happens to the forest when it doesn't rain for a long time?
Why is open fire banned in many parts of Australia?
- 🔦 Why were cars not allowed to be washed at Kyle's in Australia?

Task: How long does it take you to fill a bucket with 10 litres of water? How many buckets do you need to fill a whole bathtub?



Tip: Every day we consume a lot of energy. With an energy diary you can find out what for. Further explanations in the teaching guide (page 34). Also use the energy checklist (worksheet module 34, page 57).

For the older ones

- 🔦 How is climate change affecting Australia? Is there a connection between high heat and drought?
Climate change is causing the temperature in Australia to rise, and at the same time there is less rainfall.
- 🔦 How much water was allowed to be used per person per day in Australia and what is the water consumption per person in Germany?

Task: Find out how many litres of water you use for showering? How could you reduce your water consumption? Where can you save the most water?

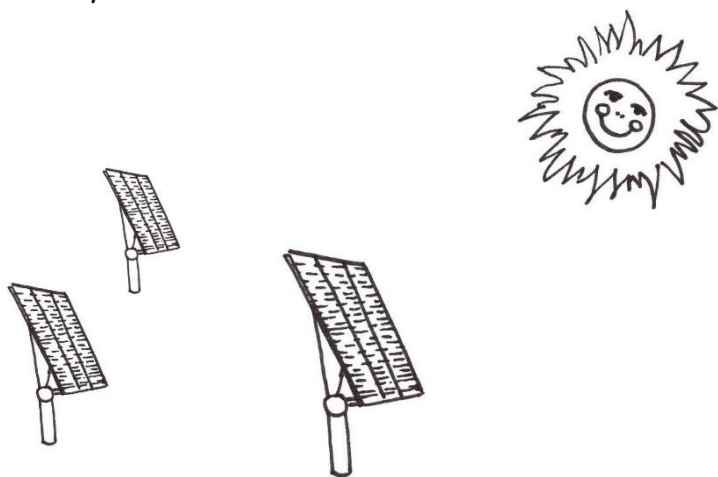


Questions and tasks: Oceania

For the younger ones

- ☞ How many oceans are there in the world? Which is the largest?
- ☞ What will happen to the many (smaller) islands if the sea level rises due to climate change?
- ☞ Why is it so easy to generate energy with solar cells in the South Pacific?

Task: Look at Oceania on the globe. Can you discover Tahiti? Can you count all the islands?



For the older ones

- ☞ Why is it such a big problem when the soil of oceanic islands becomes saline?
The islands of Oceania are very far away from all the major land masses on earth. If they can no longer grow their own food because of the salinized soil, they have to import it. This is not only expensive, but also harmful to the environment, as transport by ship or plane produces greenhouse gases.

- ☞ Apart from solar energy, there are other forms of so-called "renewable energy". What are they and why are they called that?
Electricity can also be generated from wind or water power. These are called renewable energies because, unlike oil or coal, the sun, wind or water always produces new energy.

Task: Oceania is a continent that consists only of islands. How many are there? How many people live there? Use a (children's) atlas or the internet.

Tip: Where does our energy come from and how can it be made more climate-friendly? Teaching guide p. 53, worksheet "Yesterday, today, tomorrow", module 30 and p. 56, worksheet "Introducing renewables", module 33

Questions and tasks: Europe (The Netherlands)

For the younger ones

- ☞ Do you know where the Netherlands got its name?
- ☞ Have you seen reports about floods on TV? What happens to houses during floods?
- ☞ A dike is a wall of earth built up to protect against floods and storm surges. Have you ever stood on a dike and if so, where? On a river or by the sea?

Task: Build a dike in the sandbox around a lower lying area and flood the higher lying area around the dike. Can your dike withstand the water pressure?

What does a dike like this have to look like to withstand the pressure of the water?



For the older ones

- ☞ *Why are people from other cities and countries also interested in the floating settlements?*
The rise in sea level due to climate change threatens many cities in coastal regions (search on a world map). There may also be floating settlements there in the future

- ☞ Do you know what a dike is and what it is used for? What does the term polder mean?

A dike is a wall of earth that is built up to protect against flooding and storm surges. On the North Sea coast in particular, dikes can also be used to reclaim new land and are then referred to as diking the tidal flats. Depending on the region, the areas created by dyke construction in the past are called koog, polder or groden. Today, new land reclamation has taken a back seat because it causes many environmental problems. In the future, the Dutch want to work more with the water and less against it.

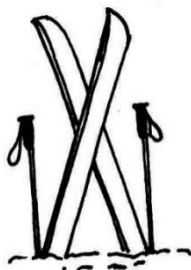
Tip: In the Netherlands, many people ride bicycles. How do the children in your group like to travel? Activity blocks 2 and 3 in the teaching guide helps to think about advantages and disadvantages of different means of transport (pages 44 and 45).

Questions and tasks (Europe): The Alps

For the younger ones

- 🔦 What are the names of the highest mountains in the world? How high do you think they are?
- 🔦 When was the last time you have you been in the snow?
- 🔦 Why is there less snow due to climate change?

Task: Have you ever taken a closer look at a snowflake? What happens to snow when you squeeze it tightly? Use the "snow" from your freezer



For the older ones

- 🔦 Imagine you meet someone who has never seen snow. How would you explain it to him or her?
- 🔦 When it stops snowing in winter, this also has an impact on our lakes and rivers. Why?
A large part of the water in our lakes and rivers comes from the mountains. This is so-called melt water, i.e. snow that melts in spring and then flows down into the valley via streams. Without the meltwater, the waters may shrink considerably, or one day even dry up completely!
- 🔦 What are glaciers? Where can you find the largest glaciers in the world?
Glaciers are huge masses of ice that form in areas where it is so cold all year round that the snow that has fallen in winter does not completely thaw. This causes more and more snow to pile up, which is then pressed into ice by the growing pressure from above. The three largest glaciers in the world are located in Antarctica, Norway and Chile.

Task: Go to your freezer at home and look at the ice crystals under the magnifying glass. Can you draw them?

Tip: Illustrating melting ice in a playful way with the break game "River crossing", teaching guide p. 42, variant melting ice floes

Questions and tasks: Europe (Italy)

For the younger ones

- 🔗 What kinds of rice do you know? What's your favourite meal with rice?
- 🔗 Have you ever experienced any water limitations at home? If yes, how did it feel? If not, ask your (grand) parents about their experience.
- 🔗 Ask your grandparents or older neighbours what the climate was like in their childhood. And what is different today?

Task: Show some photos of your favourite rice-recipes to your classmates.

For the older ones

- 🔗 *What's the link between snowfall and drought in the Po Valley?*

Part of the Po's water comes from melted snow on the Alps that flow into its tributary rivers. When it doesn't snow enough during the winter, then the Po Valley will be more exposed to droughts in the summer.

- 🔗 *What happens when it starts raining after a long drought? When it has not rained for a long time, the soil is very dry and compacted. That is why it can absorb the water very poorly, it just runs off. When it rains too much at once (heavy rain), flooding occurs, which can be very dangerous. Due to climate change, this is happening more and more often. Example: Northern Italy in May 2023.*

Task: *Look at the rice you have at home: Where does it come from? How is it grown? Is it climate-friendly? Do a quick research on the internet.*

Tip: The travel station Australia "Where the Firebugs Dance" shows similar problems.

Questions and tasks: Europe (Luxembourg)

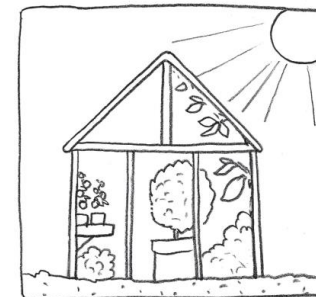
For the younger ones

- How does the Äerdschëff, as this special building is called in lëtzebuergesch, use the energy of the sun?
- Why were car tires used for the walls of the building? What would have happened to the old tires otherwise?
- How is rainwater used? Can you imagine collecting rainwater and what could you use it for?

Exercise: Try to make a small model of your own Earthship. Only use materials that you no longer need, such as old cardboards or empty packaging.

Tip: We can try to live according to the circular economy concept not only when building houses, but also in everyday life. Take a look at the swap shelf idea in the teacher manual (page 39, module 37). You can learn even more about renewable energy in the worksheets for module 33 (pages 55, 56). Here you can take a look on the Äerdschëff website: <https://aerdscheff.lu/>

For the older ones



- The Äerdschëff uses solar energy for heating. Challenges does this pose and how can they be tackled?
- Why can't we build every house like the Äerdschëff? What would happen if you stacked car tires higher than one floor?
- Rainwater is collected in the Äerdschëff cistern. How many litres would have to be stored here to supply your whole class with water for a day?
The average water consumption per person per day in Germany is 126 litres.

Exercise: Use your creativity and draw your own Earthship made from a variety of recycled materials. You can then hang your pictures in the classroom.

Questions and tasks: Europe (Germany)

For the younger ones

- 🔗 Which animals do you know that live in the forest?
- 🔗 What things in your group room/classroom are made of wood?
- 🔗 What differences between coniferous and deciduous trees do you know?

Exercise: Take a trip to the forest. Spread out at a short distance from each other, and if it's dry, you can even lie down. Close your eyes and listen to the sounds of the forest. Afterward, write or draw all the sounds you heard on a piece of paper and share them with each other.

For the Older ones

- 🔗 Is there a lot of forest in Germany? Look up together on the internet how large the forested area in Germany is. What about other European countries?
In Germany, there are approximately 11 million hectares of forest, which is about one-third of the country's total land area. Countries like Sweden and Finland have much more forested land, but they also have significantly smaller populations. For example, you can check on <https://earth.google.com/> to see which parts of the world are covered by forests - they appear as dark green areas.
- 🔗 Forests and wood are crucial in the fight against the climate crisis - can you explain why?
CO2 is one of the greenhouse gases that warms the Earth's atmosphere. When a tree grows, it removes CO2 from the atmosphere and stores it in its wood. The CO2 remains stored in the wood, even after the tree is no longer alive, such as when it's used in furniture or construction.

Exercise: What emotions do you associate with forests? Do you feel as comfortable there as you do at home? Or perhaps you feel a bit spooked, and if so, why? Gather in groups and compare your experiences.

Tip: The forest treasure trove, teaching guide page 29, activity 22.

Questions and tasks: Europe (Spain)

For the younger ones

- 🔗 Find Sevilla on a map (it's in the south of Spain). How far is it from the Doñana national park?
- 🔗 Find a seasonal calendar. What are your favourite fruits and vegetables? Are there any you haven't tried yet?
- 🔗 Have you noticed a difference in the taste of strawberries (or other fruit) in summer and in winter?
- 🔗 How can you conserve seasonal strawberries if you want to eat them in winter?
There are several ways to conserve seasonal fruits: you can make jam, jelly or marmalade, ferment them or you can simply put them into the freezer.

Task: What's your favourite way to eat strawberries?
Send us your favoured recipe for fresh strawberries and for processed/preserved strawberries.

Tip: Check the teaching guide (pp. 25-32) for further ideas, and inspiration on climate-friendly food. Moreover, take a look at <https://ourworldindata.org/environmental-impacts-of-food> to find out how much CO₂ certain food causes.

For the older ones

- 🔗 Why do you think it is environmentally better to buy seasonal and local fruit and vegetables?
Fruit and vegetables create CO₂ emissions, especially for transport. If they're not seasonal, they need more energy to be produced (e.g. heating of greenhouses) and the CO₂ emissions rise.
- 🔗 Do you know national parks in your region or your country? Why do we need to protect them?
The national parks are important for tourism in the region, for biodiversity and sometimes (like for the Doñana park) for water resources.
- 🔗 What is groundwater and why is it important?
Groundwater is a source of water that lies under the ground. It is important for all vegetation but also for agriculture and as a source of drinkable water. In fact, groundwater is cleaner than surface water e.g. from rivers and lakes, because it is filtered by several layers of soil and rock.

Questions and tasks: South America (San Martín)

For the younger ones

- How do you get from Pepe's Village to the city
- Why are the new lamps so much better than the old ones?
- What did the children have to do to get a lamp?
- Why is it so bad that there is so much rubbish in the river?



Task: Try to use no electricity for a whole day - can you do it? What is particularly difficult?



For the older ones

- How many countries are there in South America? What languages are spoken there?
- 13 countries. Spanish, Portuguese, French, Guaraní, as well as various indigenous languages such as the Chibcha languages.
- Why does the sun always rise at 6 a.m. and set at 6 p.m. for Pepe? How is it with us, and why?
It's because Peru, where Pepe lives, is so close to the equator. This means that there are practically no seasons, because the sunlight is the same all year round. Here in the northern hemisphere, we get much less sunshine in winter than in summer because the globe is tilted and turns away from the sun in winter. In Australia, it's the other way round, which is why the seasons are reversed there.
- Have you ever experienced a power cut? What would it be like if you had no electricity at home?

Task: Accompany your parents shopping and try not to buy any packaging. Do you succeed? Or why is it so difficult?

Tip: Do you have an exchange shelf in your school? For more information, see teaching guide page 39, module 58. Plastic hidden in school and kindergarten bags? Ideas on this can be found in the teaching guide on page 40, module 38. Recipes for homemade modelling clay, glue and paint can be found in our handout on climate-friendly procurement.

Questions and Tasks Asia: When the Glacier Breaks

For the little ones

- Find Pakistan on a world map. Where is the Hunza Valley? Which countries are its neighbours?
- If you only had 15 minutes to leave your house in an emergency - what would you take with you? Write down 5 things!
- Have you ever taken part in an emergency drill (for example, a fire alarm at school)? How did it feel?
- Amina's family grows apricots and cherries. Which fruits or vegetables grow in your region? Ask your parents or grandparents!

Task: Draw an ice stupa! It looks like a tall ice cone or a frozen fountain. Can you also draw Amina's village with the glacier in the background?

For the older ones

- What is a glacier and why is it melting?
- *A glacier is ice that has formed over thousands of years from compressed snow. Climate change is warming the air through greenhouse gases, so glaciers melt faster than snow can replenish them.*
- How does a GLOF (Glacial Lake Outburst Flood) occur?
- *Melting glaciers leave behind rock walls (moraines) that dam water into lakes. When the dam bursts under pressure, the water suddenly rushes down - people often have only 15-30 minutes of warning!*
- What are ice stupas? Why are they a clever solution?
- *They store winter water as ice, which melts in spring - exactly when farmers need it most urgently for sowing!*

Task: Are glaciers also melting in the Alps or other mountain ranges? What solutions are the people there trying out? Tip: Station 21 "No Water, No Rice" shows a similar problem - Alpine glaciers are melting and affecting the water supply across Europe!

Tip Pakistan lies in the so-called "Third Pole" - a region with more glaciers than almost anywhere else on Earth. Similar problems caused by melting glaciers are also shown at the North Asia station "From Permafrost to Permanent Mud?" - compare how climate change affects different mountain regions.

