

# UNDERSTANDING CLIMATE CHANGE

What is climate change, how does it affect you,  
and how can you reduce your carbon footprint?





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# What is climate change? Discover the causes and effects of climate change, our planet's greatest threat.

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A warm winter's day. A surprisingly short spring. Starting your day off in a t-shirt and shorts, ending it in a jumper and jeans ... this all sounds familiar, right?

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As we know by now, the seasons are no longer defined as they were several decades ago. Australia had its hottest and driest winter on record in 2017. Tasmania saw snow in January, a mere 72 hours after experiencing sweltering 36-degree days.

All of this is a direct consequence of what we know as climate change — a change in the climate that is produced by natural causes, but which can also be directly attributed to human activity. And it is a real threat to the planet.

In a natural state, the temperature of the planet is maintained thanks to the balance between three factors:

- the greenhouse effect, which regulates the heat that is retained by the atmosphere;
- the variation of the amount of energy that reaches the Earth from the sun; and
- changes that make the atmosphere reflect more or less heat into space.

Changes in these three factors have made the climate vary over the centuries, but the real problem begins when human activity artificially modifies some of them.

These changes are due to the fact that we are pouring more greenhouse gases into the atmosphere than can be eliminated. Therefore, they accumulate and cause rising temperatures, changes in rainfall and increasing natural disasters. And this, in turn, causes increasing concerns for the future of the planet.

In recent times, the global community has moved from asking questions like "is climate change real?" and "what is climate change?" to scrambling to figure out how to prevent climate change.

Photo: NASA on Unsplash



If we do not join forces to stop climate change, the problems facing the planet are many and varied. The many impacts of climate change can be distilled into four main categories:

- **Ice melt and sea level rise.** Rising global temperatures are causing the ice pack of the North and South Poles to melt, thus increasing the amount of water in the oceans. But glacial zones in other parts of the world, such as Latin America, are also melting. This means that if we don't intervene to curb the effects of global warming, sea level rise will leave many islands and coastal cities submerged in the coming decades.
- **Impact on agriculture and fisheries.** Changes in climate cause damage to crops — not only because of the higher temperatures, but because there are more droughts, more floods and more natural disasters. In addition, fish stocks are affected by changes in the sea currents and their living environment, endangering their survival.
- **Diseases and pests.** The spread of otherwise contained diseases is glaring evidence of climate change and its legacy. Warmer temperatures around the world allow tropical diseases to expand into new areas. For example, diseases that are almost unknown in developed countries, such as dengue fever and malaria, could wreak havoc in Australia.
- **Damage to biodiversity.** Changes in temperature and rainfall put many species of animals and plants at risk of extinction. The case of polar bears is perhaps the most famous; but it is also true for many species that cannot adapt quickly enough to ecosystems with increasingly less defined characteristics.



# How does climate change affect us?

## Do we all feel the effects of climate change equally?

Climate change is a problem that affects the entire planet. But not everyone feels the consequences of climate change the same way.

Where we experience drier winters, others experience prolonged droughts, causing the loss of harvests, loss of income and potentially serious nutrition problems for the people who grow our food.

Seasonal changes and fluctuations that may be mildly irritating for us here in Australia, can mean floods and natural disasters that devastate whole communities elsewhere in the world.

So, while climate change is a problem that affects everyone, it is indisputable that some countries fare worse than others. In many cases, it is those who have contributed the least to climate change who experience the worst of its effects and are the least equipped to respond and protect themselves against its threat.

It is clear that communities who live in poverty will feel the greatest impact of global warming, as the vulnerabilities they already experience will be exacerbated. It will become even more

difficult for them to access clean water and grow enough food to eat. Healthcare services will be even more strained, with more people getting sick from waterborne diseases and malnutrition. Children will be removed from school in order to help their families survive.

The problem does not stop there — further troubling evidence of climate change around the world includes increasingly frequent and ferocious droughts, hurricanes, floods and other natural disasters, wiping out decades worth of development. The environment is likely to degrade more rapidly due to factors such as unbridled pollution, carbon emissions and deforestation.

That's why it is now more important than ever for the international community to create development policies that ensure a sustainable economy and a rational use of resources. We must help the most vulnerable communities cope with the effects of global warming without endangering their ecosystems or their livelihoods.

Photo: Vlad Sokhin/Panos/OxfamAUS





### Does climate change intensify social inequality?

It's no accident that communities living in poverty generally occupy land that is most at risk of climate-related hazards, such as flooding, landslides and droughts. With climate change causing more disasters to strike, it is these communities who experience the worst of it, thereby worsening pre-existing inequalities.

Food producers from poor countries are especially vulnerable. They depend on their harvests to survive and make a living; without them, they have no way to escape poverty.

In this sense, rising food prices is one of the most worrying impacts of climate change in relation to social inequality. With a higher number of droughts or floods, the number of lost crops increases exponentially. This translates into price rises and people having even more difficulty feeding themselves and their families.

If we want to avoid this situation, it is vital that countries around the world adopt sustainable and economically-responsible agricultural policies that guarantee the essential rights of small-scale food producers.

You can also contribute to a more sustainable global economy, by buying Fair Trade products wherever possible. This ensures that every product you buy has been produced with both respect for the environment and respect for the rights of all the people involved in its creation.

If producers earn a liveable wage for their product, it will be much easier for them to put measures in place to protect themselves from disaster and rebuild if or when it does strike.

# How to stop global warming and climate change? The quest for climate change solutions.

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Climate change is a global problem and we must tackle it on all possible fronts: at an individual, local and, of course, international level. Only by using all available means, and acting swiftly and decisively, will we be able to curb the devastating effects of global warming.

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So what steps are being taken by governments around the world to combat this problem? And what can you do to reduce your own carbon footprint?

## How are governments working to stop global warming?

Governments first began to realise that global warming was a real problem in the 1980s, when it became clear that something was changing on our planet. In 1992, the United Nations Framework Convention on Climate Change was created, an international agreement that is now accepted by most countries. The goal of the agreement was for governments to control their emissions of greenhouse gases into the atmosphere and to take appropriate measures to effectively monitor the problem.

The agreement was expanded in 1997 with the Kyoto Protocol, although it wasn't enforced until 2005. The objective of this protocol was for countries to reduce their greenhouse gas emissions by 5–8%

from the level of emissions they were producing in 1990. This was a small first step, but it was certainly a step in the right direction for creating change within industrialised countries — all, that is, except Australia.

While Europe promised to reduce its emissions by 8%, the United States by 7%, and Japan and Canada by 6%, Australia refused to sign unless its Kyoto target would be 8% above 1990 levels.

This was an incredibly disappointing result for Australians who cared about doing our part to reduce carbon emissions. The Australian Government has since pledged to reduce our emissions by 26–28% from 2005 levels by 2030, despite data indicating that we will be about 140 million tonnes — or about 30% — above that target based on current growth.<sup>1</sup>

1. Kilvert, N. (2018), Forget Paris: Australia needs to stop pretending we're tackling climate change, ABC News Online, <http://www.abc.net.au/news/science/2018-01-11/record-heat-bom-paris-targets/9310996>

Photo: Vlad Busuiock on Unsplash



## Local governments leading the way

The situation is not entirely dire — the **Climate Council** recently reported that 70 local councils across Australia, representing more than 7.5 million people, have vowed to take action to tackle climate change in their own backyards.

Their Cities Power Partnership is a free national program that exists to celebrate and accelerate the emission reduction and clean energy successes of Australian towns and cities. It's a coalition made up of mayors, councillors and communities who are committed to a sustainable, non-polluting energy future through small, achievable actions, like using solar energy at the local library, switching to electric buses, or opening up old landfills for new solar farms.

## Day-to-day ways to stop global warming. What can you do to save the planet?

If we want to put the brakes on climate change and put the greenhouse effect into reverse, we need everyone to join the battle — that includes YOU! There are so many things that you can do to help: in your home, your workplace or even when you're out and about.

Climate change is a problem on an enormous scale, but here is the good news: if we all do our little bit, we have time to resolve it. After all, there are more than seven billion people in the world! If we add up all the small actions that we can carry out, don't you agree we will see a difference?

## Climate change solutions at home

Reducing the impact of your house on the environment is an excellent way to begin tackling climate change. Many major causes of global warming can be found in our homes, right under our noses. To begin with, insulate your house correctly. From the windows to the floor to the roof — good insulation is crucial for not losing heat. This way you will continue to save on heating in the winter and air conditioning in the summer.

You could also try changing all the light bulbs in your house to LED lights. These types of bulbs don't contain mercury or tungsten, and what's more, they don't produce heat. This means that all the energy spent is used to create light, not generate heat like incandescent bulbs. With LED lights, you can cut your carbon emissions by around 80%. They also reduce household energy consumption, which you will notice in your bill.

Another tip is to choose light colours when painting your home. Lighter tones reflect the light better and make the most of the sunshine. Even better is to go for natural paint composed of clay, lime and natural pigments: it's non-toxic and offers the same results as conventional paint.

Electrical appliances are climate change culprits too: every time you have to buy a new one, choose the product with the best energy certification. It's true that they are more expensive, but they consume less and last longer, so you'll soon recover that extra investment. Remember to be careful with leaving them plugged in unnecessarily — household and electrical appliances continue to consume power even when they are not in operation.

This means that, even if you are not using them, they are using electricity and are therefore costing you money. Always unplugging when you aren't using your appliances is an excellent way of reducing the consumption of household resources.





### Climate change solutions in the kitchen

Did you know that the food you eat can have a massive impact on climate change? For example, every time you cook half a kilo of beef, you are consuming more than 6,000 litres of water that has been used to feed the cattle. That is the amount of water that a single person would, on average, drink in eight years! About 8% of all the water used in the world is used to produce food that feeds livestock.

And not only that — cattle are directly responsible for emitting almost 19% of all the greenhouse gases that are discharged into the atmosphere. The digestive system and manure from these animals produces methane and nitrous oxide, two greenhouse gases far more lethal to the planet than carbon dioxide.

Each year, more than 40kg of meat is produced per person. Do you know how many cattle are needed to maintain that level of production? And, even worse, how much water is spent on feeding them?

If half a kilo requires 6,000 litres of water, this means that 40kg of meat requires 480,000 litres per person per year. And there are over 6 billion people in the world!

If, for a single day a week, families made a meal without meat, can you imagine how much water would be saved around the world?

Choosing a diet with more vegetables is an excellent way of helping the planet, because it reduces our water consumption. The number of litres needed to grow vegetables is much lower than what is needed to maintain the livestock; and if we buy local products, we reduce the energy costs involved in moving the products from the most remote areas.

Buying locally has other very important advantages, such as helping small family farms in Australia to keep up with the big agricultural and livestock corporations. And, if all this was not enough, we will also be helping the development and growth of our country.

In addition, choosing a more vegetarian diet is also a perfect way to promote healthy habits in your home. Eating too much meat can cause health problems of varying degrees so by teaching young children to eat a balanced diet today, we will be protecting their health tomorrow.

## Climate change solutions when moving about

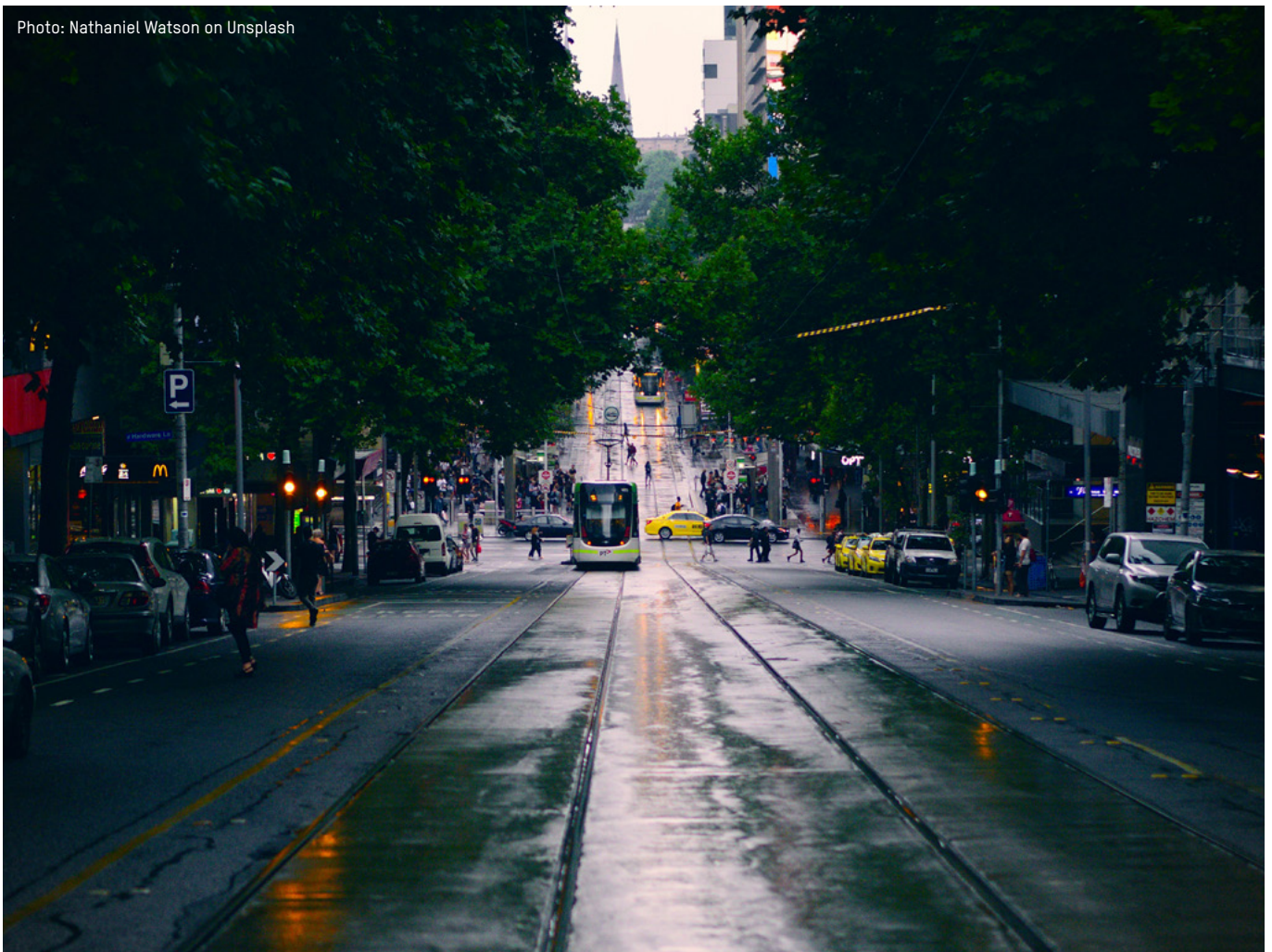
Outside the home, you can also do your part to improve climate change statistics. Every time you choose to take public transport, walk or cycle somewhere instead of driving your car, you are reducing greenhouse gas emissions. And if you can't avoid getting in the car because you have to make long journeys or do not have public transport nearby, try to invest in a hybrid car or one that works with biofuels.

Another idea if you are not planning on changing cars in the next few years is to try to share trips; you can carpool with your co-workers or create a schedule with parents from your children's school to all go together, so you use fewer cars. Using all the seats of the vehicle whenever possible is an excellent way of reducing the number of cars on the road, and also greatly reducing the carbon emissions that are released into the atmosphere.

And you also have other alternatives to your own vehicle: from hourly rentals when you need to go shopping or to the doctor, to car-sharing for trips and long journeys. The options are becoming more and more extensive, and you are sure to find the one that best suits your needs at all times without necessarily having to buy a vehicle of your own.

As you can see, you have many options at your disposal to put the brakes on climate change. If we all adopt habits that are more respectful to the environment, we can make a big difference and curb the devastating effects of global warming. Together, we can achieve it!

Photo: Nathaniel Watson on Unsplash





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