



Are Natural Disasters Actually Natural?

Climate change has no bias, but our societies and systems do. And although it's a danger to all of us, a changing climate affects some groups disproportionately, raising issues of justice and equity. In this episode of Crash Course Climate and Energy, we'll take a look at the ways injustice within societal structures causes climate change to affect some more than others and discuss some of the work that environmental justice advocates are doing in response.

0:00

Narrator M Jackson appears on screen; satellite view of Cyclone Giri; photos of tragic floodings in Myanmar; clips of Rohingya refugee camp and refugees

From 2010 to 2015, the Rakhine State in Myanmar was pummeled by severe weather events. A cyclone swept through in 2010. Floods destroyed about 1.7 million tons of rice in 2011, making scarce a primary staple of the country's diet.

And in 2015, there was even more serious flooding. Events like these are becoming more frequent and more severe because of climate change. But they don't affect everyone equally.

In Rakhine, a group called the Rohingya were some of the hardest hit—and not just by the floods. The Rohingya are Muslims in a Buddhist-majority state, and they had been discriminated against by the government for decades.

When these storms made resources scarce, instead of being seen as neighbors, the Rohingya were seen as competitors. This fueled violence and deepened inequalities against the Rohingya.

Since 2017, nearly a million have fled their homes and become refugees. To be clear: climate change did not on its own cause this violence. People did. If we could remove people from climate change—and just think about how greenhouse gases are trapping more heat—well, that would be a lot simpler.

What is complex about climate change is, well, us.

1:19

Crash Course Climate + Energy intro clip plays; Graph labeled "At Mauna Loa Observatory" showing increase in carbon dioxide monthly; images of city in hazy mist, cars driving to an evacuation site

Because when the effects of climate change impact communities all around the world, those impacts layer right on top of pre-existing cultural, political, and economic contexts.

Hi, I'm M Jackson, and this is Crash Course Climate and Energy. [THEME MUSIC]

When you hear scientists talk about climate change, you'll often hear us mention increasing amounts of greenhouse gases in the atmosphere.

And that's a helpful metric. It's something we can measure and track as time goes on to get a sense of how the planet is doing. But on their own, the numbers don't tell us how our lives will be impacted.

I mean, sure, there are more than 400 molecules of carbon dioxide out there for every million air molecules.

But what I want to know is if my air-conditioner can handle the next heatwave, or if my grandma in Florida is going to face another Category 5 hurricane this year. And you probably have your own questions like that. Maybe our grandmas are even pool buddies.

The key is, climate change is about more than just molecules in the air. It's about our ability to respond and adapt to our changing world—like whether we can afford a new AC unit, or if Grandma's health will let her drive inland before a storm.

These are things shaped more by society than by climate change. And right now, we live in an unequal world. The carbon dioxide molecules bopping around might be emotionless and bias-free, but our systems and societies aren't.

2:58

Aerials clips of Arctic villages in Teriberka Russia and Utqiagvik, Alaska

We live in a world where different societies value different people differently for unfair and unjust reasons.

Racism and extreme inequality remain common — which means some groups are supported less by their society and as a result, have been and will be disproportionately affected by climate change. It also means they have fewer resources to adapt to it.

Climate change isn't just an environmental or a humanitarian crisis. It's a crisis of justice. Regardless of wealth, race, nationality, or level of status in a society, people's environments should be clean, healthy, and sustainable.

That's what people are talking about when they say "Environmental Justice." Environmental justice covers a whole range of environmental issues, like water quality and air pollution, but it also includes climate justice.

Climate justice is the idea that the challenges we're facing as our climate changes shouldn't affect any one community more than others, even though the physical impacts are different around the world.

One example: the poles are warming faster than the equator, so communities across the Arctic are experiencing vanishing sea ice and land ice, melting tundras, and severe storm events.

Climate justice proposes that these communities should have the power to improve their situations — and they should be able to get the support they need to adapt.

4:30

Animation of coal-fired power plant; images of air pollution from coal plant, community members gathering, wind and solar farms, officials in front of new zero-emission bus fleet

Since environmental and climate injustices overlap, focusing on one helps the other. Take a coal-fired power plant, for instance. It releases all kinds of carbon emissions that contribute to climate change. So, climate justice would see that plant replaced with carbon-free, renewable energy sources.

But build on that. Coal plants have been historically placed within low-income communities and neighborhoods of color, often because these communities have less time and fewer resources to lobby against them.

That means the air pollution from burning coal, and the contaminated water from dumped waste directly affects those communities, increasing risks of cancer, driving down real estate prices, and much more.

So, climate justice says both retire the coal-burning power plant and involve the impacted community to help equitably replace it with wind and solar.

The result: you improve local air and water quality and empower the surrounding community. But climate injustice in particular goes way beyond local power plants. It's experienced all over the world.

You know how when you go out to eat with friends, you usually split the bill based on who ordered what? So, if your friend got a five-dollar bowl of soup, and you got the jumbo seafood platter, you're probably not going to split the bill 50/50? That wouldn't be fair, right? Well, at the moment, climate change isn't fair.

5:55

Clips of CO2 smoke emitting into the air, floodings resulting from climate change; graphic of increasing restaurant bill

Wealthy, economically-developed countries have emitted the majority of the CO₂ in the atmosphere, and they're typically better able to adapt. Lower-income nations contribute far fewer emissions but are much more susceptible to the effects of climate change, and are less able to adapt.

For example, a flash flood in the U.S. could cause serious damage, but a flash flood in Bangladesh could cause serious damage and upset water systems and cause a cholera outbreak. And there might not be enough resources to replace lost crops.

So, the risks lower-income communities face are multiplied. These communities didn't order the proverbial seafood platter — it wasn't even on their menu. But they're being hit with the bill. Meanwhile, in the wealthier parts of the world, everyone just keeps ordering more seafood, and on top of that, so long as someone else is paying, throwing in fancy desserts.

This kind of injustice can't be dismissed as purely accidental; it's not an error on a restaurant receipt. And it's not just present between different parts of the world.

Injustice within countries is also extremely common, and sometimes is the result of legal unequal treatment that continues to have consequences even after the laws themselves have been corrected. To see how this can play out, let's head to the Thought Bubble...

7:19

Animations depicting redlining, Black community enduring heat caused by industrial surroundings; white community amongst lush greenery and homes

In the United States in the middle of the 20th Century, people from marginalized groups, and especially Black people, were discriminated against by wide sectors of society including banks and insurance companies.

This discrimination made it difficult to buy homes, among other things. These practices led to redlining, where maps were drawn in towns and cities to concentrate marginalized communities into isolated, often undesirable, and under-resourced neighborhoods.

Redlining was banned in 1968. But its legacy continues to negatively impact many towns and cities across the U.S.

Formerly redlined neighborhoods are more likely to be heavily built up with tall buildings and cement surfaces that absorb heat, and not much greenery to help them cool down. As such, these neighborhoods have become some of the hottest places in the country.

On average, historically redlined areas are about 2.5 degrees Celsius hotter than other neighborhoods in the same city. And in the summer, they can be more than 10 degrees hotter.

Also, since highways and industry are often intentionally built within redlined areas, air pollution affects predominantly Black neighborhoods, more than others, leading to higher rates of asthma, and other health impacts.

8:36

Animation of Black community advocating for climate justice

Add that to the fact that Black communities typically have poorer access to healthcare due to the legacy of racist policies and practices throughout the medical system — and environmental injustice becomes a question of life and death, even in one of the richest countries in the world.

So, formerly redlined neighborhoods today are becoming literal hotspots for environmental and climate justice advocacy as people work to dismantle unjust legacies. Thanks, Thought Bubble.

Not every injustice is quite so overt. Sometimes, policies with unequal impacts are more subtle — or they're the result of well-intentioned, but under-informed decision-making.

A storm happening now is connected to a policy that may have been outlawed decades ago and to fossil fuels that started being released hundreds of years ago, in a place far away.

And it's worthwhile to try to untangle all of this. Because there are all kinds of unexpected, and unequal, effects of climate change that we can better address when all the cards are on the table.

For instance, due to a variety of cultural contexts that privilege men, women, girls, and those across the gender spectrum are more likely to feel the sting of climate change.

9:56

Photos of Indigenous communities marching in the USA and Philippines; clips of floods, severe storms, dried crops

This is especially true in rural areas and lower-income countries where women don't have the same freedoms and job opportunities as men, and are less likely to own land or have access to resources to cope with disasters.

Indigenous communities as a whole also face extreme environmental injustice. Worldwide, they're some of the strongest advocates for the environment, and are responsible for protecting some 20% of the Earth's surface, and some 80% of its biodiversity.

But indigenous people are often harmed by discriminatory policies that don't factor them in, even as the environment changes around them.

And as their homes and lands degrade, they can be left impoverished and without the power to change their situation. And this story? It begins with the unjust practices of colonizing indigenous people's lands, and continues to this day.

When injustices are combined with the increasing risk of hazards like floods, storms, and heat waves in our warming world, they can lead to catastrophe.

For example, the 2011 monsoon season in Thailand caused deadly flooding. The rains started early, and multiple tropical storms drenched the country and impacted millions of people.

11:15*Clips of grave floodings in Thailand*

But when the flooding began, the government focused on protecting the higher-income capital. So while there was damage in the capital area, it dodged the worst-case scenario.

However, lower-income communities outside the capital were unsupported and underwater for as long as three months. The flooding in those communities was actually made worse because of all the water being diverted away from the capital.

The humanitarian crises during extreme events like this have led some experts to suggest that there's no such thing as a "natural" disaster. They're not saying tropical storms don't exist. Instead, what they're saying is a storm chilling in the middle of the ocean isn't a disaster: That's a natural weather event.

It only becomes a disaster when it makes landfall and impacts communities. And when societal inequity limits the resources available to protect people against these storms, and communities are devastated as a result—that's a human-caused disaster.

Environmental and climate justice are about more than just responding to disaster, though. If people, companies, and governments making decisions aren't taking inequalities into account, even trying to slow and prevent climate change can have negative effects.

12:33

Images of renewable energy sources, raw natural materials in different countries; clip of tree-lined community; photo of Mia Mottley, Prime Minister of Barbados speaking at UN Climate Change conference; video credits displayed

For instance, making a huge number of batteries, solar panels, and wind turbines to power a renewable energy grid is going to be great for the climate—but requires raw materials that have to come from somewhere. Multinational companies often mine these materials in lower-income countries like Chile, Mexico, and the Democratic Republic of Congo.

And that's not because those are the only places those minerals exist; it's because that's where they can be produced cheaply and with fewer regulations, allowing these companies to sidestep responsibility for the environmental impacts local communities face as a result of the mining.

So, if we don't move forward with attention to patterns and histories of inequality—both globally and within our own communities—we risk repeating many of the same mistakes all over again.

Climate change is about more than molecules and gases. It's also about you, and me, and our billions of neighbors—and all the weird, terrible, and sometimes wonderful, stuff that comes with us.

The encouraging thing is environmental justice advocates — so many passionate people—have been and are working now to address these inequalities.

Sometimes, this looks like communities planting trees in their concrete-heavy neighborhoods harmed by redlining. And other times, this looks like policymakers folding issues of climate justice into their national or even international priorities. We'll get more into those policies in the next episode.



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