Everyday Stories of Climate Change

Written by Gemma Sou, Adeeba Nuraina Risha, Gina Ziervogel
Illustrated by Cat Sims

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Dedicated to the families we spoke to

To download the comic go to
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When we talk about climate change, we often use abstract ideas such as 'the planet is warming,' 'global sea levels are rising' or 'rainfall is becoming more unpredictable.' But, how do these changes actually impact the daily lives of 'ordinary' families across the world?

In this comic, you will travel to five countries and explore the everyday ways that low-income families experience climate change. The stories shine a light on some of the overlooked and 'mundane' impacts of climate change for those who are often left to shoulder much of the responsibility to adapt and recover.

In Bangladesh, you will learn how sea-level rise is impacting women's domestic duties. From there, you will head to South Africa where drought is experienced differently based on a person's race, linked to the country's apartheid history. Next, you will cross the Atlantic Ocean to Bolivia and discover how migration allows families to adapt to climate change, but that separation of family members can also strain relationships. Your fourth stop is Puerto Rico, where food security is an issue after hurricane Maria. The final destination is the Caribbean Island, Barbuda, where people are resisting 'disaster capitalists' after hurricane Irma.

All the stories are based on our primary research. The characters are fictionalised, but their stories reflect some of the shared experiences of the people we spoke to. We could not include every finding and so we ask that you bring your own knowledge of the world to fill in the gaps, silences and blank spaces in the comic. We aimed to bring through the personalities, humour, voices, and identities of people because the media often homogenise people into groups such as 'climate victims' or 'poor people'.

We hope you enjoy,

Gemma,
RMIT University

Adeeba,
BRAC University

Gina,
University of Cape Town


Victoria, Australia
pulp
Jasmine
blur
beep beep beep
I'll be back soon.

Question One:

How does Bangladesh experience climate change?


Khulna, Bangladesh
Sea level rise has contributed to the salinisation of the local river
Rohima
Zzzzz
Zzzz
Wake up, babu!
Yuck!
Raju, how many times must I tell you?
The tap water is salty!


Ready?
One minute!
Halima's family might move to Dhaka.
Why?!
Same old reason, more jobs.
And I bet you don't need to walk hours for water.
SWEEP, SWEEP
Sometimes I think it would be easier to move closer to this river...
I know, but it's so far away from everything.


Hey Ma!
Can we do some more planting?
Sure!
water purifying tablet
Why don't you plant them in the ground?
It's too salty, they would die, babu.


And here we'll have potatoes soon.
Yum!
I'm home!
HUFF HUFF
Faruk gave me watermelon seeds!
He said they can grow in the salty soil!
Ha ha ha
POTTING SOIL
May
June
August


Climate change is just one factor that increased river salinity.
Really? What else happened in Khulna?
Development projects including seawalls to protect against cyclones have silted the rivers too!
But hold your thoughts for now, because I want to take you all to South Africa...
Cape Town, South Africa
Elna
GOVERNMENT DAM LEVELS ARE CRITICALLY LOW. CONSUME 1 SAL A DAY.
Reduced rainfall has depleted the water in the dams that supply the city
Keep some bathwater for the garden too!
Aloes and Spekboom are drought tolerant.
A leak!


Is that the water department?
...I need someone to fix it.
But, it's on your property.
You need to get a plumber.
Elna, the ward councillor is meant to help with these things.
...and I'm worried about my water bill.
Maam, the leak is on your land.
OUNCILLOR
Sir, the government built the house!
GOVERNMENT HOUSING CON
They need to fix it.
I'm sorry, but...
I bet they don't have these problems where the white people live.


I fix a lot of leaks around here...
GRRR
Go speak to the water caucus.
They raise people's concerns with the city government
KHAYELITSHA
Molo, kunjani?
This is Elna, she's from Mitchell's plein.
I was told you might be able to help me.
WATER ACCESS NOW!


I had a leak, but city government won't help.
Y'know Elna, when they built our houses, they used cheap materials!
I use less water now, but pay more.
They're trying to earn back what they spent on the water infrastructure.
City government put up the tariffs, so we'd use less during the drought.
DISCUSS
We're collecting people's stories to lobby city government.
Can we add yours?
Definitely.
OK, class, what are your thoughts?
I think white people tend to live in richer neighbourhoods, where the infrastructure is better.
Why did Elna say white people dont have these problems?


What country are we looking at next?
Bolivia in South America.
Cochabamba, Bolivia
Rainfall patterns have become more unpredictable
Mauge
253


Nanna! hahaa!
Only two today...
I didn't sell much again.
bon o bon o bon
Madrid, Spain
Noelia.
CLICK
NOELIA +34782858148
Mamá. How are you?
And Alfredo and Ima?
Good. They're doing schoolwork...
There's been a lot of rain...


Choque and Liya's house slipped last week.
But, we've lived on the hill since 1953!
If you don't have land title it is not our responsibility.
LOCAL GOVERNMENT
They asked for help, but it was the same rubbish.
Is our house OK?
I'll send more money for construction next month.
We're fine, don't' worry. They wanna say hello...
Hola my niños!
When are you coming home, Mamá?
Soon, when I've made enough money to build our 'casa bonita'.
I miss you Mamá.
I miss you so much...

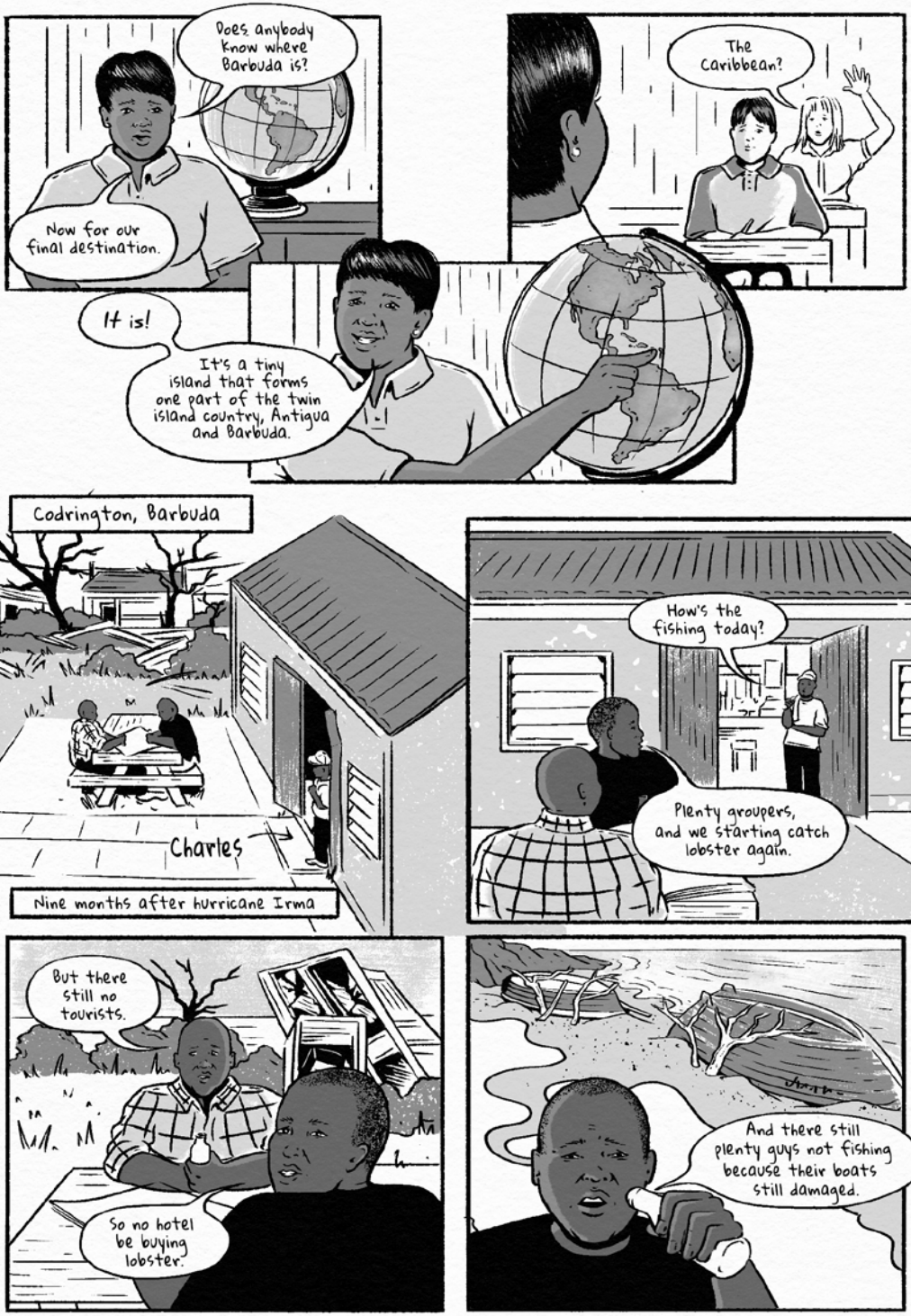

Solo
Retaining wall
YOUR LOCAL SHOP
COLD BEER
Deep foundation
Goodnight mama!
So, what do You think about Mauge's story?
But why aren't there enough jobs in Bolivia?
I guess it's a good thing that her daughter Noelia went to Spain to earn more money...


These are all brilliant points that we'll discuss at the end of class.
But now let's take a trip to Puerto Rico.
THOUSANDS OF PUERTO RICANS STILL WITHOUT ELECTRICITY
Toa Baja, Puerto Rico
Luisa
Three months after hurricane Maria
You know they restored the electricity in the city weeks ago.
CHUG CHUG CHUG
She has that generator on all day!
CHUG CHUG CHUG
Hola Papá
How was the job hunt today?
There's nothing.
Everything is still boarded up.


The aid truck is here!
I'm sick of this so-called food.
FEMA
CHIPS
MILK
CHOCOLATE Snack Pot
CHOCOLATE Snack Pot
RAVIOLI
RAVIOLI
CHICKEN Noodle
CHICKEN Noodle
Niños! No playing in the street. It's filthy!
Bye Felix.
Bye Karina.


Huh?
POLLO
$9.25
Hector!
Why is everything so expensive?
The government is mainly importing aid and reconstruction materials so I've less to sell now.
I'm sorry Luisa.
Asopao
Mamá, you forgot the chicken.
It's a new special recipe with extra peas!


I bet we can grow our own veg and raise our own chickens before the prices drop!
CLINK
MEDALLA
Light
MEDALLA
Light
Do you see how people's lives are impacted months after the hurricane?
It's great Luisa adapted in so many ways.
But there should be more government support, surely?


Does anybody know where Barbuda is?
Now for our final destination.
The Caribbean?
It is!
It's a tiny island that forms one part of the twin island country, Antigua and Barbuda.
Codrington, Barbuda
Charles
Nine months after hurricane Irma
How's the fishing today?
Plenty groupers, and we starting catch lobster again.
But there still no tourists.
So no hotel be buying lobster.
And there still plenty guys not fishing because their boats still damaged.


How's Denise?
OK, but she real worried about next hurricane season...
Mom!!
Dad!!
Yeah, my boys be real jumpy when there a bit of wind now.
And this fool still talking rubbish.
'LOCALS ARE SQUATTING'
Mr Browne needs to learn some history.
He knows this be communal land since slavery ended.
He just want to sell the land.
It already starting.
Everyday I'm seeing guys coming over from Antigua.


Private companies building luxury hotels in the south.
And now he want to sell the lagoon!
We don't want the island to become a play pen for the rich and famous.
He stalling recovery, thinking we'll get fed up and leave.
Pfff, but he won't even fix the post office or bank.
But the Barbuda council is trying to stop them building...
They working with the Global Legal Action Network...
"DEVELOPERS WANT TO DESTROY A HABITAT OF INTERNATIONAL SIGNIFICANCE TO BENEFIT THE ULTRA-WEALTHY."
And sustainability experts.
The lagoon protects the Barbuda people during extreme weather.


It would destroy the frigate birds' habitat.
And endanger the West Indian whistling duck.
They don't understand how much it would damage this place...
OK class. We visited a lot of places today.
What do you think are some key lessons?


The richest half of the world emits 86% of the greenhouse gases that cause climate change.
Barbuda
But, lower-income people around the world are the most impacted by climate change.
Puerto Rico
Our voices need to be at the centre of policy discussions and decision-making.
Bolivia
The international community and national governments need to do more to support grassroots adaptation and recovery strategies in vulnerable regions.
South Africa
Bangladesh
And there needs to be a lot more action to limit global warming to 1.5°C. Are you doing anything to address climate change?

CLIMATE CHANGE

Climate change across the world

The impacts of climate change are unevenly distributed across the world. Lower and middle-income countries (who are often former colonies) are being burdened with most of these impacts. This is not because these countries experience more natural hazards necessarily, but rather because they are more vulnerable to hazards. Even within countries, the impacts of climate change are unequal, as people who are the most socio-economically marginalised are often the most vulnerable because their livelihoods are more sensitive to climate impacts, they often have less choice on where to live and so reside in areas exposed to hazards, and they have limited capacity to adapt and recover.

Women in Khulna, Bangladesh.
Source: Adeeba Nuraina Risha

Experiencing climate change

Climate change impacts can manifest as slow or rapid-onset hazards. For example, the scale and impact of the drought in Cape Town, South Africa, became more severe over several years. Whereas, the hurricanes in Puerto Rico and Barbuda were rapid-onset hazards that took place over a few hours. Yet we should not forget that the warming of the planet over many decades instigated climate change.

When considering how people experience the impacts of climate change, most approaches focus on factors that can be measured such as deaths, injuries, damage to buildings and infrastructure, economic losses, impacts, employment losses, and environmental degradation. Some impacts are more subtle and difficult to identify, or they represent 'secondary' impacts of climate change that may take months or even years to manifest. For example, in Barbuda, David's wife and Patrick's children were still experiencing the psychological impacts of hurricane Irma months later. Or in Puerto Rico, the children could not play outdoors until the garbage was collected because parents worried about children catching leptospirosis – a fatal disease spread through rat urine. These may seem insignificant on the scale of global climate change, but they nevertheless play an important part in the everyday ways that families experience climate change.

Climate change exposes the inequalities in human wellbeing globally. Low-income, women, racial and ethnic minorities, people with disabilities and health problems, LGBTQIA+ populations and the elderly typically experience the impacts of climate change most adversely. For example, in Bolivia, indigenous Quechua populations – including Mauge's family – are often marginalised from accessing higher-income employment, which means they can only afford to live on cheap (or free) land that is often geophysically insecure. In South Africa, Elna shows us how many black families often live in housing with inadequate services and struggle to get government support, which exacerbates climate change impacts.

The Western Cape Water Caucus, Cape Town.
Source: Gina Ziervogel

Adapting to and recovering from climate change

Government actors are key to facilitating adaptation and recovery. However, across 'developing countries', the most marginalised peoples are often the most affected by climate change, and there is often limited political will from governments to substantially invest in their adaptation and recovery. In addition, development aid projects that are designed to help communities adapt to climate change and address other local development needs, can in fact have many adverse impacts on the environment. Take Khulna for example, where sea-level rise is just one factor that has contributed to river salinity. Research has found that other factors such as seawalls that are designed to reduce the impacts of cyclones and rising sea levels have in fact silted up the rivers and caused drainage-related flooding. With this example in mind, it is important to recognise how climatic change interacts with other environmental processes to impact people's everyday lives.

This means families must shoulder much of the responsibility for adaptation and recovery. Adaptation and recovery strategies are often low-cost and rather simple. For example, Rohima harvesting rainwater and growing vegetables in containers, or Elna saving bathwater to flush the toilet. Other strategies might be time-intensive and expensive, such as Noelia migrating to Spain to earn money to invest in building a more resilient house.

Families with greater and more diverse resources are more likely to carry out adaptation and recovery activities more quickly and effectively than those with fewer and less diverse resources. These resources include time, economic income, social networks (i.e., family, and friends) and the strength of these relationships, nutrition and health, external support from government actors, and non-governmental organisations. In the comic, you can see many of these resources that people draw on to adapt and recover. However, many of these strategies can come with costs that are often not acknowledged in the media or academic research. For example, migrating to earn money to fund adaptation and recovery strategies results in separation between family members that can be emotionally and psychologically difficult. Likewise, women often carry out many activities to adapt and recover so that home life can resemble some sense of 'normality'. For instance, in Puerto Rico, Luisa innovated the asopao recipe to include peas and she grew vegetables so her family could access nutritious food. Yet this can make women's everyday lives more difficult.

After impacts from large-scale rapid onset hazards like floods or hurricanes, national governments and/or private businesses often see the situation as an opportunity to 'build back better'. This often means attempts to displace people from their land to establish activities that will be economically profitable. We can see this in Barbuda where there are attempts to build luxury tourist hotels. Yet, the Barbuda population is working with non-governmental organisations and the media to prevent their land from being lost to private businesses.

A 'casa bonita' towering over a traditional house, Cochabamba. Source: Gemma Sou

Representing climate change 'victims'

Visual representations of people affected by climate change in TV, film, social media, the news and non-governmental organisations' fundraising and advocacy campaigns often invisibilise any individualising features, because people are combined into groups e.g., climate change victims. This denies people their personal experiences, voices, personalities, and identities. Images are often highly emotive and depict people at their most personal and vulnerable moments. We often see images of children, women, the elderly, and those who are injured or malnourished, which convey ideas of helplessness and passivity. These images can bring about emotions such as guilt and indignation, or empathy and gratitude. This emotion-focused approach is associated with short-term participation in climate change-related issues, typically through donations to charities.

In the comic, we sought to bring through the voice, humour, personalities, and hidden personal experiences of people living with climate change. We wanted to create three-dimensional characters who express their emotions and unique personalities. We highlighted the capacities that families have to adapt to and recover from climate change thereby challenging the idea that people are helpless and passive. Yet, we have been careful not to romanticise people's capacity, because governments and international organisations must do a lot more to support families. If not, the burden of responsibility will continue to fall on the shoulders of low-income families.

Dirty streets, two months after Hurricane Maria, Puerto Rico
Source: Gemma Sou

DISCUSSION POINTS

CLIMATE CHANGE AND THE WORLD

1. What is climate change?
2. Does climate change affect all regions on Earth equally?
3. What kind of map is displayed on the teacher's wall? What is its significance?

IMPACTS

1. How does climate change impact the everyday lives of families? Extension: Categorise the impacts into social, economic, political, cultural, environmental and psychological; short and long-term.
2. How and why do different characters experience climate change impacts differently? You might like to create a table with different rows to represent gender, age, disability, race, ethnicity.
3. Looking at your answers from question 1, evaluate which factor/s have the greatest impact on families.

Workers arrive to construct hotels after Hurricane Irma, Barbuda.
Source: Gemma Sou

ADAPTATION AND RECOVERY

1. Define the difference between climate change adaptation, and recovery from climate change impacts.
2. Describe how people adapt to and recover from climate change in Bangladesh, South Africa, Bolivia, Puerto Rico, and Barbuda.
3. Outline the resources families used to adapt to and recover from climate change.
4. Explain some of the challenges that the families faced when trying to put in place sustainable climate change adaptation measures.

IMPROVING ADAPTATION AND RECOVERY

1. Identify who is responsible for climate change adaptation and recovery across the five neighbourhoods.
2. Suggest how can the families collaborate with other families in the neighbourhood to better adapt and recover.
3. Discuss how local, national and foreign governments might better support low-income families to adapt to climate change and recover from its impacts.

REPRESENTING CLIMATE CHANGE EXPERIENCES

1. How does the comic's portrayal of people impacted by climate change compare to that in mainstream media representations?
2. If you created a comic about climate change, who would be your main characters? Why?
3. If you created a comic about climate change, what would you like the reader to take away from it? Why?

REASONS TO GRAPHICALLY ILLUSTRATE RESEARCH

Many people have asked us why we decided to publish our research as a comic. Here we want to share a handful of the reasons for doing this.

Constructing ethical representations of people

Popular culture, as depicted in TV, film, social media or the news often misrepresent people, places, and cultures. This is particularly true of the visual representations of low-income people affected by climate change. Too often people are homogenised into groups as 'helpless victims' who lack any distinguishing features or unique personalities or experiences. Comics, with their focus on character-driven narratives, are able to develop three-dimensional characters with unique personalities, emotions, and personal experiences of the people that your research is about. In this way, comics allow you to bring through the voice, identity, and personalities of people in your research, which is often not possible via mainstream media or traditional approaches to research dissemination i.e., journal articles. Comics allow you to 'play' with time, by illustrating people's past experiences as well as their future oriented aspirations and dreams. They also allow you to move quickly through a character's experience, jumping hours, weeks, months or even years in time, which allows you to cover a lot of ground when storytelling.

Making research more participatory

Comics offer what we think of as a more participatory opportunity for research participants to influence and understand the work of academics. A comic may be far more useful to research participants than a research report, book, or journal article. When people can literally 'see' themselves in a comic, they are instantly invested. In our experience, people living in the neighbourhoods where we conducted research felt more comfortable giving their input on how events, perspectives, and people are represented in a visual storytelling form than in an academic article or book chapter. While the dialogue is not made up of direct quotes, these illustrated stories are based on research participants' testimonials of their lived experience with climate change.

Finally, there is something about the physicality and durability of a print comic that lends both legitimacy and longevity to the research it presents. It won't

be lost somewhere in the wilds of the endless Internet or trapped behind the pay wall of an academic journal but can be found on a shelf for future generations to discover.

Teaching in engaging and innovative ways

Comics offer new pedagogical avenues that can contribute to and support traditional teaching from academic texts. Comics combine the power of research with the unique aesthetic elements of comics as sequential art, using pages, panels, visuals, dialogue, captions, and lettering to tell the story. They build strong characters that drive the narrative without being too intrusive. Comics also use the visual medium to express non-human environmental elements in a form that is not overly didactic. This approach makes comics excellent for critical analysis because readers can use their wider understanding of theories, concepts, and ideas they learned in class or elsewhere, to unpack the stories' images, dialogue, and narratives. Adding to this, given the increasing visual literacy of students there is a growing desire among students for more visual learning materials across all age groups.

Releasing your inner creativity

Comics are also about providing opportunities for researchers to work more creatively themselves. No longer holed up in a room alone writing for hours on end, researchers and comic artists can share, push, pull, and compromise as necessary in the pursuit of a visual representation of research. This process has been challenging and exciting in equal measure. It has raised questions about what to leave out, what works narratively and aesthetically, but also about how to ensure the integrity of the research and of those being represented. To this end, it is important to work with an artist who is sensitive to the research findings, but also has the skill and intuition to know what works visually.

ABOUT THE AUTHORS

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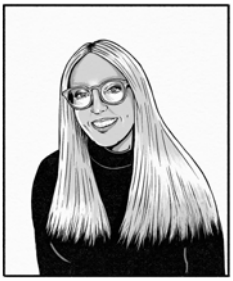

Cat Sims is an artist based in London. Her work covers a broad range of mediums, from graphic design to comics and printmaking. She has worked as a freelance illustrator for over ten years.

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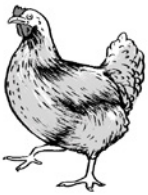

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When we talk about climate change, we often use abstract ideas such as, 'the planet is warming' or 'rainfall is becoming more unpredictable.' But, how do these changes impact the daily lives of 'ordinary' families across the world?

In 'Everyday Stories of Climate Change' you will travel to Bangladesh, South Africa, Bolivia, Puerto Rico, and Barbuda to discover how families experience the impacts of climate change, and their strategies to adapt and recover.

The stories are based on research by Adeeba, Gemma and Gina.