



WHAT HAS A POLAR BEAR GOT TO DO WITH ME?

Why respecting and saving the environment is a justice issue which affects us all



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When the last tree is cut, the last fish is caught, and the last river is polluted; when to breathe the air is sickening, you will realize, too late, that wealth is not in bank accounts and that you can't eat money.

Alanis Obomsawin (Abenaki filmmaker) in *Conversations with North American Indians* (by Ted Poole, 1972)
in *Who is the Chairman of This Meeting? A Collection of Essays* edited by Ralph Osborne

Foreword

This booklet contributes to the increasing body of literature, documentaries and popular texts which call for the development of a heightened consciousness about the ecological crisis and the devastating destruction of the Earth and all its life forms. Cataclysmic disasters are becoming common testimonies of the ecological crisis and the relentless adherence to political and economic systems that are geared towards an unsustainable future and the extinction of life. These systems that are concerned with endless growth, extractivism, consumerism and technological innovation propel us into deepening ecological crises and a hastening of the annihilation of the world's interlocking ecosystems.

This booklet draws attention to some of the striking features of the ecological crisis which continue to advance in a context of gross inequalities, poverty and unemployment; the loss of livelihoods amongst working people; the increasing lack of access to good healthcare; the growth in number of climate refugees; asymmetrical distribution of food and ongoing struggles and control over the resources of our planet.

This booklet also adds to the works of many scholars, movements and activists who appeal that "we open our eyes" and who are calling for the urgent recognition of our intimate relationship with the environment and the Earth - physical, emotional, intellectual and spiritual. As part of our deep and organic connections with the Earth, this booklet draws attention to why ecoliteracy and ecopedagogy are now imperative. This booklet therefore serves as a pedagogical contribution to the development of a new consciousness amongst students, young and old in schools, community learning centres, vocational education and universities. It has also been written for educators, curriculum developers and policymakers who practise in the broad field of education. It suggests the need for new models of environmental education (ecopedagogy) that locate engagement with the ecosphere with developments in economy, techno-science and society. It is our hope that this booklet would encourage greater engagement with new models of environmental education.

The booklet also hopes to inspire greater agency and emancipatory praxes in community, educational institutions as well as in political movements. It is no longer enough for policymakers to simply highlight the importance of the ecological crisis as a cross-cutting theme and its insertion into curricula. Neither is it sufficient for teachers in the educational system to simply 'teach' about the ecological crisis. Whilst the above are important, this booklet calls for centering life-affirming ecological pedagogical praxes that inculcate a deep ecological consciousness that inspires actions toward the protection of all life forms - this we regard as central to the humanising project. This booklet signals that planetary consciousness and a life-affirming ecological praxis may well be foundational to efforts dealing with the widespread forms of inequality including racism, sexism, classism, homophobia and so forth. Ultimately, any endeavour towards building substantive democracy, a just society and peaceful world is not possible without critical ecoliteracy and ecopedagogical praxes.

May this booklet spawn solidarity amongst all of us and increase participation in the struggles to build a collective consciousness and an authentically sustainable planet. It is vital for all of us to take up the task to include ecopedagogy and ecoliteracy as important components in the reconstruction of education, economy and society.

Ivor Baatjes
Director, Centre for Integrated Post-School Education and Training, Nelson Mandela University



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Rodney & Otamatea Times

Waitemata and Kaipara Gazette

August 14, 1912

Coal consumption affecting climate.

The furnaces of the world are now burning about 2,000,000,000 tons of coal a year. When this is burned, uniting with oxygen, it adds about 7,000,000,000 tons of carbon dioxide to the atmosphere yearly. This tends to make the air a more effective blanket for the earth and to raise its temperature.

The effect may be considerable in a few centuries.

National Library of New Zealand/Creative Commons

The Intergovernmental Panel on Climate Change (IPCC) report, described by some as “life changing”, states that the world’s temperatures are on track for a warming of 3.2°C by the year 2100. As early as 2030 (in just over 10 years!), all indications are that we will go beyond the 1.5°C **threshold** and beyond the 2°C mark the **decade** after.

[Global warming of 1.5°C: An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty](#)

(IPCC, 8 October 2018, South Korea)

Before the report came out, Donald Brown reviewed three independent studies which show that climate change is a much more urgent and serious threat than indicated by past IPCC reports, and examines the **ethical** questions they raise.

[The IPCC systematically underestimates climate risks: Here’s the proof](#)

(Donald A. Brown, 8 October 2018)

Three papers have recently been published that lead to the conclusion that **human-induced** climate change poses a much more urgent and serious threat to life on Earth than many have thought who have been relying primarily on the conclusions of the IPCC.

- **Trajectories** of the earth system in the **anthropocene** (Steffen et al, 2018)
- 1st-century modeled **permafrost** carbon **emissions accelerated** by **abrupt thaw** beneath lakes (Anthony et al, 2018)
- What lies beneath: On the **understatement** of climate change risks (Breakthrough Institute, 2017/2018).

<https://www.ecologise.in/2018/10/08/the-ipcc-systematically-underestimates-climate-risks/>



Dear Reader

By the time this booklet goes to print or by the time you read it, another disaster like Hurricane Michael in Florida (United States of America) or the wildfires in California (USA) may have happened.

On Wednesday 10 October 2018, the north-west part of Florida was struck by Hurricane Michael. Many people died, and communities, homes and **infrastructure** were destroyed. Michael is the strongest hurricane in recorded history **to make landfall** in that region, and the third strongest to hit that continent.

California's "Camp Fire" becomes deadliest in state's history 13 November 2018

Strong winds were blowing again Monday in California, bringing with them bad news for millions of people hoping to avoid some of the most destructive wildfires the state has ever seen. The whipping winds - and **tinder-dry** conditions - will threaten areas **statewide** for the rest of the week, fire officials warned. They said it could take weeks to fully contain the blazes raging across Northern and Southern California. So far,

at least 44* people have been killed - 42 in the "Camp Fire" alone, making it the deadliest wildfire in California history. The Camp Fire had burned almost 7,200 structures as of Monday evening, most of them homes - meaning the Northern California wildfire is also the most destructive in state history.

<https://www.cbs58.com/news/californias-camp-fire-becomes-deadliest-in-states-history>

*by the 26th November the death toll was 87

Just in case you think this hurricane or these wildfires or a flood or a drought in another part of the world or a polar bear far away has nothing to do with you, please don't stop reading but rather read on...

The Earth is more than just a home. It's a living system and we are part of it (James Lovelock, The Gaia **Hypothesis**)

**the first Greek god was a goddess - Gaia or Mother Earth. It is said that Gaia works to achieve and maintain harmony, wholeness and balance within the environment. She heals, nurtures and supports all life.*



See Page 3

threshold - limit/should not go beyond

decade - a period of 10 years

ethical - moral/right/correct

systematically underestimates - always makes less of than it should (so it is bigger/worse than the IPCC always says it is)

human-induced - made or brought about by humans

trajectories - paths/way we are going

anthropocene - the present geological age, viewed as the period during which human activity has been the dominant (main) influence on climate and the environment

permafrost - soil, rock or sediment* that is frozen for more than two years in a row. In areas not covered by ice, it exists beneath a layer of soil, rock or sediment, which freezes and thaws annually (every year) and is called the 'active layer'

* a naturally occurring material that is broken down and transported by wind, water or ice, and/or by the force of gravity acting on the particles

emissions - releases/gives off or out

accelerated - speeded up/faster than it should go

abrupt - sudden/quick

thaw - melt

understatement - presenting something as being smaller or less (harmful or dangerous) than it really is

infrastructure - things like buildings, roads, power supplies, etc

to make landfall - to reach land after a journey by sea or air

tinder-dry - very very dry and so a fire can start easily

statewide - across all states (like provinces)/all over the country

hypothesis - a proposed (suggested) explanation made on the basis of limited evidence as a starting point for further investigation or looking into



PART 1: THE STORY

The Year: **2098** The Place: **Somewhere on the ravaged Earth**

Grandmother: *Once upon a time, actually not that long ago, there were many trees and flowers, animals and birds, plenty of water and fresh air which we didn't have to pay for, there were people going about their daily life, and fish in the ocean.*

The children look at their grandmother in amazement.

Fundiswa: Fish in the ocean? I only see plastic in the ocean, lots and lots of it.

Grandmother *(giggles softly):* Yes, my child. We used to catch and eat fish until they became so full of plastic that we could no longer eat them. They eventually died because the ocean became a huge rubbish dump - people threw all sorts of things into the sea and about 40 years ago the amount of plastic became more than the fish and the fish died. Something like the dinosaurs!



"Aquatic life is bathing in a soup of antidepressants," says marine biologist

(Derek Beres, 15 October 2018)

A new British study has discovered that "our aquatic life is bathing in a soup of antidepressants."

Entire ecosystems are being negatively affected by our pharmaceutical use. The drugs re-enter our bodies when we consume seafood from these areas.

<https://bigthink.com/surprising-science/what-are-dangers-eating-seafood>

Plastic found in the poop of eight people from eight different countries

(Cathleen O'Grady, 24 October 2018)



Lonwabo: Makhulu, were people really stupid in those days?

Grandmother: Yes, my child, it would seem we were really stupid, even though some thought they were really clever.



Only two things are **infinite**, the **universe** and human stupidity, and I'm not sure about the former.

Albert Einstein

Fundiswa: Makhulu, I thought there were many schools, colleges and universities? Didn't people learn things there?

Grandmother: Yes, they did learn things there, many got degrees including Masters and PhDs.

Lonwabo (trying to understand): So...what did they learn? Did they learn all the wrong things?

Grandmother: It would seem so, my child, it would seem so...



The truth is that many things on which your future health and **prosperity** depend are in **dire jeopardy**: climate stability, the **resilience** and productivity of natural systems, the beauty of the natural world, and biological diversity. It is worth noting that this is not the work of ignorant people. It is, rather, largely the result of work by people with BAs, BSs, LLBs, MBAs, and PhDs.

David W. Orr (environmentalist, academic and activist), 1991

ravaged - wasted/very badly damaged/destroyed

aquatic - water (sea in this example)

antidepressants - medicines/tablets used for the treatment of people suffering from depressive disorders and other conditions

marine - sea/ocean

infinite - never ending/goes on forever

universe - the world including space (planets, stars, etc)

prosperity - wellbeing/richness – but it is not only to do with money

dire jeopardy - very bad danger

resilience - the ability to recover quickly from difficulties, toughness, hard times

degrading - break down/lower/make worse

fracking - the process of injecting liquid at high pressure into subterranean (underground) rocks, boreholes, etc, so as to force open existing fissures (cracks; openings) and extract (take out) oil or gas

Fundiswa: I'm confused...

Lonwabo: Me too...

Akhona: And me...

Grandmother: Well, we learned things like the importance of growing the economy in the name of 'progress and development' - not everybody questioned progress for who or what kind of development; not everybody questioned the idea of infinite growth on a finite planet...

Bonginkosi: Makhulu, what is that?

Grandmother: It means growth cannot go on and on if it is dependent on extracting (or taking) from, **degrading** and destroying the Earths' natural resources (like trees; soil; water; minerals; etc). The natural resources will not continue forever - there will eventually be none...

Fundiswa: Did people not know this, Makhulu?

Grandmother (sighs): My child, let me give you an example of something that used to happen - this happened to the community in which I grew up: a large international company came and it wanted to start **fracking** on a piece of land in our community. Most of the people, like my parents, protested because they did not want our ancestral land and

our livelihoods destroyed but, with government's approval, the large company went ahead anyway, saying the mine would bring jobs and 'growth and development'.

Lonwabo: And did it?

Grandmother: The bosses (most of them lived overseas) got rich, but not us. The company destroyed our land, our clean water and air, and our livelihoods. We used to farm cattle and grow vegetables, but we had to stop...some people, like us, moved to cities to try and find work...many became beggars on the streets of the big cities as they could not find jobs...

Fundiswa: But...didn't some community members get employed by the big company to do the fracking?

Grandmother: Yes, a few people. The company employed people they wanted to and many of them did not live in our community. Some of the jobs were mechanised and done by robots. So most of the community members lost their livelihoods because we could no longer farm.

Akhona: Did the company build roads or a school or a clinic for your community?

Grandmother: No, my child. They said they would but it never happened. Companies are more concerned about making profits and keeping their **shareholders** happy than doing anything good for 'ordinary' people.

Fundiswa: It sounds so unfair, Makhulu.

Grandmother: Yes, my child. That is why it is important to remember that the ecological crisis is a justice issue - the global poor (poor people in the global South and North), people of colour, women and children suffered the most. Countries in the Southern hemisphere were the most badly affected, even though we did the least amount to cause the almost total destruction that eventually came. Let me give you an example: on the 29th August 2005 (a few years before I was born), **Hurricane** Katrina struck and caused huge devastation to New Orleans in the United States of America. After the storm, flooding followed and eventually nearly 80 percent of the city was under some amount of water. Katrina also destroyed large parts of Louisiana, Mississippi

and Alabama. It killed nearly 2 000 people! New Orleans city's population was mostly 'black' (about 67 percent) and nearly 30 percent of its people lived in poverty (yes, my children, you can live in poverty in a rich country). Hurricane Katrina made life even worse and left many of New Orleans' poorest citizens even **more vulnerable** than they had been before the storm.

Bonginkosi: So there were warnings of what was to come, Makhulu?

Grandmother: Yes, there were many and for many years. For many of us, we were never really told what was going on and we never really listened if someone said something. I'm also not sure if we ever really cared enough to do anything. Maybe we didn't connect the dots; we didn't always think about what was going on in different countries - they were so far away from us and we had our own issues to deal with, oftentimes difficult ones. And many people said that these were just natural disasters and had nothing to do with what humans had done and continued to do to the Earth. As a child no one ever spoke to me about it. At school we were told to recycle but we didn't really bother much. My parents had bigger things to worry about like finding a job as neither of them had full-time employment and educating us, their children, and sometimes even about whether they had enough money to buy food for us or enough money for taxi fare. So why would I waste my time thinking about people and things so far away?

shareholders - people who invest or put money into a business

hurricane - a storm with a violent wind that can cause a lot of destruction. Most hurricanes form over warm seas near the equator

more vulnerable - weaker/with even less than before/ in more danger/more exposed to the possibility of being harmed in some way

discarded - thrown away



BEPA warns against reducing role of coal in SA's energy mix

Black Energy Professionals Association is one of several organisations which this week have made public submissions to Parliament's energy committee on the draft Integrated Resources Plan (Lindsay Dentlinger, 18 October 2018)

The Black Energy Professionals Association (BEPA) is warning of thousands of job losses and a collapse of the coal and nuclear industries if government's draft Integrated Resources Plan (IRP) is adopted in its current form.

The association has gone as far as to predict ghost towns in Mpumalanga and Limpopo if the country reduces its reliance on coal energy.

The association's Meta Mhlari said: "Coal is our own resource; we do not want to wake up and we have ghost towns."

BEPA argues that the coal and nuclear industries have the highest potential for job creation and cheap electricity.

<https://ewn.co.za/2018/10/18/bepa-warns-against-reducing-coal-in-sa-s-energy-mix>

Please see, at the end of this booklet, an Open Letter to President Cyril Ramaphosa: Demand for Emergency Parliamentary Sitting on UN 1.5°C Report (COPAC & SAFSC).

I used to think:

SO WHAT? What has the ecological crisis got to do with me? I have enough things to worry about. Why should I care?

- I thought the ecological crisis was about 'tree huggers' and 'greenies' who care more for trees and plants than they do for people. **I was wrong.**
- I thought the ecological crisis was about middle class people who are more concerned about animals than about other people. **I was wrong.**
- I thought the ecological crisis was about nature conservation (like protecting game reserves and botanical gardens). **I was wrong.**

- **I didn't care if the weather got hotter - I like hot weather! I was wrong.**
- I had more important things to worry about and to do, so why should I care about the ecological crisis!? I have never even seen a polar bear except in a picture...

Fundiswa: Makhulu, even if you didn't know or didn't know that much, you didn't cause the disaster that came and yet you suffered it the most. It's so unfair!

Grandmother: Yes, my child, the people who were most at risk of climate chaos and environmental disaster had the *smallest carbon footprint* and we certainly weren't buying the most 'stuff' (we were the most materially poor). All that stuff got used and sometimes used very quickly, then **discarded** and replaced with more stuff - it caused such a huge waste problem.

Carbon Footprint





Carbon footprint - the amount of carbon emitted or given off by a person, group, household, organisation or activity over a given time period. This is usually due to the burning of fossil fuels, such as *coal*, *natural gas* and *oil*. The more fossil fuels that are used during an activity, the larger the carbon footprint, for example flying in an aeroplane results in a larger carbon footprint than taking a train to cover the same distance. Activities that are part of the natural carbon cycle, such as breathing, are not counted. A carbon footprint can also contain emissions of other *greenhouse gases**, such as methane (see more on methane in Part 2).

*greenhouse gases are also found naturally in the atmosphere and help keep the Earth's surface warm enough to enable life to exist



On the climate change frontline: the disappearing fishing villages of Bangladesh

(Karen McVeigh, 20 January 2017)

Kutubdia's islanders don't have much of a carbon footprint - most don't have regular electricity. But they are facing the reality of a changing climate, and soon tens of millions of their fellow Bangladeshis will be at risk. "I was born there, so were my parents and grandparents," said Onu Das, 25, standing on a sandy coastal path atop a concrete **embankment**, pointing to a forest of mangroves. "There were mango, betel nut and coconut trees. Now we are landless and it is very difficult. We do not get food regularly. We fish. Somehow we are trying to survive." "The ocean is **torturing** us," said Pushpo Rani Das, 28, a mother of three who has had to move her home four times to escape storm **surges**. "We can't stop it. Water enters my house in every high tide, especially in the rainy season." Rani fears that soon her family will have to leave the island altogether. A 100 **yards** from where she lives, a half-built brick mosque lies **abandoned**, its cement foundations washed away.

The fishermen [of Ali Akbar Dail] no longer fish in the shallow waters around the island because of a decrease in catches, which they believe is linked to the water warming, Hari said. Now, they travel

10 to 15 hours to the deep sea. But this year, they have seen an increase in **signals**, forcing them back to land and cutting their earnings further. "Around 15 to 20 years back, signals were not as frequent as they are now," Hari said. "When the signal comes you can't go to the deep sea because it could change at any time."

Asked what they would do if they could not fish, Hari laughed. "We can't do anything. When we catch fish, we eat. Our only **asset** is the ocean."

It is a dangerous life. Last month, 89 fishermen who left for the deep sea did not return. Moqbul Ahmed, project coordinator of Coast, an organisation working with climate-affected communities and migrants on Kutubdia and elsewhere, believes the villagers are victims of climate change. "High tides never used to enter the villages before," said Ahmed. "One portion of the island has already been washed away. I'm quite convinced it is happening because of climate change. "There are too many challenges. People are losing their ancestral land, and they are having to migrate to other places. There, they have to adapt to a new environment. There are families from Kutubdia who were once rich, with land and cows and boats, and now are living in slums and are beggars. There is no money for the migrated people and no government policy to help them."

<https://www.theguardian.com/global-development/2017/jan/20/climate-change-frontline-disappearing-fishing-villages-bangladesh>



Extreme climate change could happen in just 12 years - and it's the poor and vulnerable who will suffer most

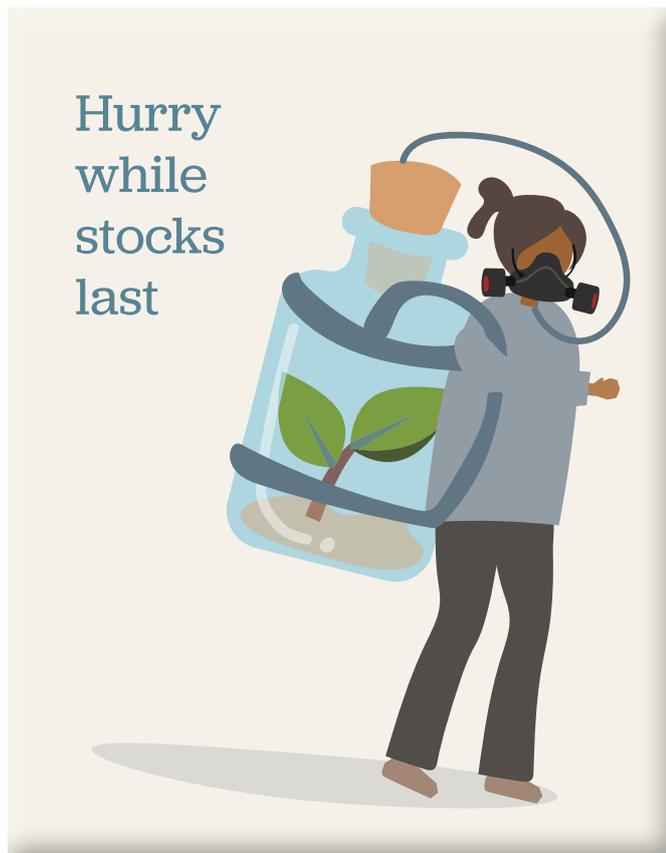
(Ariel Conn, 13 October 2018)

<https://metro.co.uk/>



embankment - a protective barrier
torturing - tormenting/punishing
surges - outpourings/swells/flows of water
yards - 1 yard = just under 1 metre
abandoned - left/no one uses it anymore
signals - signs/alert or 'telling' you about potential danger
asset - strength/good thing

The grandmother starts to cough and says: Let's stop and take some breaths of oxygen.



Grandmother: You know my children, we never used to have to do this...

Bonginkosi (a bit confused): Do what Makhulu?

Grandmother: Buy clean air and use masks to breathe it in.

Fundiswa: What did you do?

Grandmother: We just breathed the air around us. It used to be free, like water.

The children laugh.

Bonginkosi (deep in thought): I can't imagine free water or free air.

Fundiswa: Makhulu, I remember last time when you told us this story, you said that the ice melted in the Arctic because of warmer temperatures because of climate change because of how human's behaved and what they did to the Earth. And you said the polar bears couldn't hunt or look after their cubs or rest after swimming.

Grandmother: Yes, my child, their habitat got destroyed, but I still didn't think at that time that I needed to worry about silly bears so far away from me. I had other things to think about as I told you.

Fundiswa: Ooooh, Makhulu, now we'll come to the part where you and everyone had to take note!

Grandmother: My children, you always listen so well to the story.

Fundiswa (in a slightly annoyed tone): It's a pity most people did not listen in those days...

Lonwabo: Makhulu, this is the most scary part... please tell us what happened next?

Grandmother: Sea levels around the world started to rise and some islands and cities disappeared completely!! People, plants and animals died. We had heard about hurricanes in parts of the world which had caused great destruction, but hurricanes go away and people could then rebuild.

Lonwabo (adds quickly): The problem with the sea water is it didn't go away! It stayed! So land became sea! Tell us about that president...the American one who said that climate change did not exist...



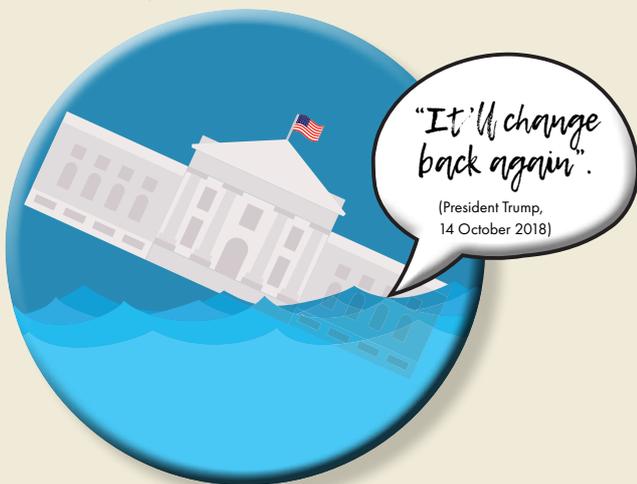


On climate change, Trump is a complete disaster, along with the entire Republican leadership.

... It is hard to find words to describe the fact that the most powerful country in world history is not only withdrawing from global efforts to address a truly **existential** threat, but is also dedicating itself to accelerating the race to disaster, all to put more dollars in overstuffed pockets. No less astounding is the limited attention paid to the phenomenon.

"A Complete Disaster": Noam Chomsky on Trump and the future of US politics (C.J. Polychroniou, 24 April, 2018)

<http://www.truth-out.org/news/item/44261-a-complete-disaster-noam-chomsky-on-trump-and-the-future-of-us-politics>



And in Brazil...the newly-elected president, often called the 'Trump of the Tropics', Jair Bolsonaro is almost certain to be worse than Trump himself.

"Bolsonaro wants to do as he'd like in the Amazon, 60 percent of which sits within Brazilian borders. There, he plans to open the rainforest to agricultural development, essentially putting a match to an entire rainforest of stored carbon by inviting rapid deforestation - the industrial-scale **felling** of trees, which, in dying and **decomposing**, will release into the atmosphere all the CO₂ they have stored inside them".

Could one man single-handedly ruin the planet?

(David Wallace-Wells, 11 November 2018)

<https://www.ecologise.in/2018/11/11/could-one-man-single-handedly-ruin-the-planet/>

Grandmother (sighs): The leaders of the time! President Donald Trump's winter White House in West Palm Beach was completely destroyed by the rising sea levels. Luckily for him, he left in a spaceship with a few other rich people who had been making plans for years to relocate to Mars. The rich people abandoned the Earth and we do not know what happened to them - did they get to Mars? Are some of them in bunkers? Are they still there? We don't know.



Elon Musk is aiming to land spaceships on Mars in 2022 (Sherisse Pham & Jackie Wattles,

29 September **2017**)

<https://money.cnn.com/2017/09/29/technology/future/elon-musk-spacex-mars-iac-conference/index.html>

Billionaire bunkers: A look inside the world's largest doomsday shelters (Katie

Dangerfield, 7 August **2017**)

<https://globalnews.ca/news/3611776/billionaire-bunkers-doomsday-shelters/>

A pilot project for a new libertarian floating city will have 300 homes, its own government, and its own cryptocurrency

(Leanna Garfield, 6 July **2018**)

<https://www.businessinsider.co.za/floating-city-plans-seasteading-institute-peter-thiel-blue-frontiers-2017-12>

existential - to all existence/life

felling - chopping down

decomposing - break down and rot/decay

libertarian - a collection of political philosophies and movements that uphold liberty as a core principle. Libertarians believe in political freedom and autonomy (self-governing), emphasising freedom of choice, voluntary association and individual judgment

cryptocurrency - alternative currency (money)/a digital medium of exchange



Akhona: And Makhulu, what about everybody else? Those who were not rich enough to leave Earth in spaceships? I remember that the story gets very sad at this point...

The children snuggle up to each other. Akhona goes to her Grandmother to sit with her.

Grandmother: It is a **tragic** story. Billions of people, animals, fish, birds, crops, trees, plants and flowers died. Over the next few years billions of people died - if the rising sea levels did not kill you, then severe weather conditions did - droughts in some parts of the world where people died of starvation; others were killed in forest fires that raged on for weeks. Still others died from the most freezing weather ever experienced. Everything went crazy! Some people, like me, managed to survive but our lives were never the same again. People left their villages and towns and cities in search of a better life and there was huge **migration** all over the world - climate refugees - displaced by human's disrespect and ill-treatment of the Earth.

Fundiswa: Makhulu, what if we can go back in time, say to 2019...people can listen, they can observe, they can experience, they can read, they can learn and they CAN act!

Bonginkosi: We could get everyone to start thinking about the polar bears!

Grandmother: I wish we had taken note of so many things around us...now we have handed a devastated Earth to you, our grandchildren. I am so sorry...



Climate change: Eight African cities named in top 10 "extreme risk" zones

No continent is more vulnerable to climate change than Africa, according to the recently-released 2018 Climate Vulnerability **Index** (Patrick Galey, 14 November 2018)

<https://www.thesouthafrican.com/climate-change-vulnerable-african-cities/>



Climate change **rarely** comes up at the top of the list when people are asked about issues that concern them most. While this is not surprising, it is nonetheless disturbing considering the **gravity** of the climate crisis. Yet the key problem of our **collective negligence** of the climate crisis is reflected in the question itself, rather than the answer. Let us be clear: climate change is not an "issue." Rather, it is now the entirety of the **biophysical** world of which we are part. It is the physical battleground in which every "issue" is played out - and it is crumbling.

<https://roarmag.org/magazine/organizing-culture-climate-justice-movement/>

tragic - very very sad/distressing/heartbreaking/regrettable/unfortunate

migration - the movement by people from one place to another with the intentions of settling, permanently or temporarily in a new location

index - indication/measure

rarely - hardly ever

gravity - something that is very serious/important

collective - all of us

negligence - inattention/disregard/neglect

biophysical - an interdisciplinary science that applies approaches and methods traditionally used in physics to study biological phenomena (things)

Read all about it...

Storms of my grandchildren: The truth about the coming climate catastrophe and our last chance to save humanity by

James Hansen (*the father of climate change awareness, who in 1988 told a congressional committee that something called the 'greenhouse effect' where heat-trapped gases are released into the atmosphere was causing global warming*).

8 world cities that could be underwater as oceans rise by **Olivia Rosane**

Half of the Great Barrier Reef has died since 2016 - Here's what happens if all coral reefs on earth die off by **Kevin Loria**

Air pollution inequality widens between rich and poor nations by **Jonathan Watts**

Climate change is wiping out the baobab, Africa's 'tree of life' by **Ameenah Gurib-Fakim**

May 2018 broke thousands of temperature records across the US by **Dahr Jamail**

We're under attack from climate change - and our only hope is to mobilize like we did in WWII by **Bill McKibben**

Dahr Jamail: Billions of people will be displaced by sea level rise by **Janine Jackson**

Global warming's terrifying new math by **Bill McKibben**

For 400 straight months, the earth's temperature has been above average by **Jesse Mechanic (25 May 2018)**

The sea may be absorbing way more heat than we thought by **Matt Simon**

Mpumalanga tops world nitrogen dioxide air pollution charts by **Mashadi Kekana (30 Oct 2018)**

Fish and plants already affected by climate change in South Africa's oceans by **Staff writer: MyBroadband**

We've lost 60 percent of animal populations since 1970. This generation may be last to save nature, report says by **Ashley May**

Organizing on a sinking ship: The future of the Climate Justice Movement by **Kevin Buckland**

Going beyond "dangerous" climate change by **Kevin Anderson**

UN says climate genocide is coming. It's actually worse than that by **David Wallace-Wells**

The world is hot, on fire, and flooding. Climate change is here by **Eric Holthaus**

Yes, I am a climate alarmist. Global warming is a crime against humanity by **Lawrence Torcello**

It's not climate change - It's everything change by **Margaret Atwood**

genocide - the deliberate killing of a large group of people (especially those of a particular nation or ethnic group. In this context, it means all or most of life on Earth)

We look at the ecological crisis in Part 2...

NOTE

You will find a set of questions and activities at the end of each part of the booklet for you to use and/or adapt. Many people will read and use this booklet (people of different ages, from different contexts, etc), so some questions and activities may not always be relevant or appropriate. You are encouraged to make up a few of your own and to share them with others. The questions and activities are meant to serve as a guide - activities can be done in small groups, large groups or individually.

Part One Questions

- 1) What did you know about the ecological crisis before reading this part of the booklet?
- 2) Did you learn anything new about it from Part One? If so, what?
- 3) Have you heard similar arguments to the one made by the Grandmother in the story? Who said what, where and when? Do you agree or disagree? Explain why.
- 4) What do you think of this statement?
Coal is our own resource; we do not want to wake up and have ghost towns (Meta Mhlari, BEPA) (Page 9).
How would you respond to this statement? What suggestions would you make?
- 5) The Grandmother explains that the ecological crisis affects poor people more than the rich. Describe how this is the case and use examples to support your argument.
- 6) Research project: Do you ever hear South African leaders talk about climate change/global warming/the ecological crisis? If so, what do they say? Choose a South African leader and find out what she or he has said in the past year about climate change/global warming/the ecological crisis.
- 7) Watch the news on TV OR listen to it on the radio OR read a newspaper/s OR read posts on Facebook OR Twitter (or wherever you get your news from) for the next few days. Note down how many times climate change/global warming/the ecological crisis are referred to.
What do you think of your 'findings'?
- 8) There are eight African cities named in the top 10 'extreme risk' zones? (Page 13). What do you think about this? Are you:
 - surprised
 - scared
 - angry
 - doubtful?Why do you feel this way?
- 9) Find two of the articles listed in Part One (Page 14). Read them and then write a summary of each and a response to each (what are your thoughts on what the writer/s of the article/s is saying?).

10) If you have access to the Internet you can use an online carbon footprint calculator to see how much carbon dioxide your actions release. What do you think of your footprint findings? Are you:

- surprised
- scared
- angry
- shocked?

11) Make up your own questions here.

12) Now that you have read Part One, do you think a polar bear has anything to do with you? Why/why not?

More readings:

2018 was the year we could no longer pretend climate change wasn't happening

No matter how much or how little attention you pay to climate change, there seem to be more and more moments lately when it becomes impossible to ignore the harsh reality of what we're facing. 2018 was no exception.

(Tessa Koumoundouros, 29 December 2018)

<https://www.sciencealert.com/the-moments-of-2018-when-the-reality-of-climate-change-smashed-us-in-the-face>

Sorry to be a bummer but here's everything huge we've found out about climate change in 2018

TLDR; it's not looking good, guys.

(Elfy Scott, 21 December 2018)

<https://www.buzzfeed.com/elfyscott/sorry-to-be-a-bummer-but-heres-everything-huge-weve-found>

This is not a dress rehearsal: Climate can no longer wait

(Alison Rose Levy, 3 January 2019)

<https://truthout.org/articles/this-is-not-a-dress-rehearsal-climate-can-no-longer-wait/>

California wildfire was deadlier because of ignored warnings

(Axios, 30 December 2018)

<https://www.axios.com/california-paradise-wildfire-forgotten-lessons-ignored-warnings-9b4929b1-9898-4d3a-a507-8550be2b40af.html>

What the believers are denying

The denial of climate change and the denial of racism rest on the same foundation: An attack on observable reality.

(Ibram X. Kendi, 1 January 2019)

<https://www.theatlantic.com/ideas/archive/2019/01/what-deniers-climate-change-and-racism-share/579190/>

PART 2: THE ECOLOGICAL CRISIS.

WHAT IS IT?

The science; the numbers:

Human activities such as the burning of fossil fuels to use in cars, taxis, trucks, factories, homes, etc gives off carbon dioxide and this goes into the atmosphere (air). Other activities, such as raising livestock, increase methane levels (cattle give off large amounts of **methane** gas in their burps and farts - this greenhouse gas is *many times more potent (stronger) than carbon dioxide*) (See more below). Livestock **manure** also gives off methane and nitrous oxide, another greenhouse gas. Forests often get cut down and burned to make more land for industrial livestock production. Trees are a natural absorber of carbon and so by cutting them down, carbon dioxide is released into the atmosphere. For years we have had high concentrations of these greenhouse gases in the atmosphere which trap more heat on Earth, causing a rise in global temperatures. Hence GLOBAL WARMING*. About **97%** of climate scientists agree that *human activity* is the main driver behind the global warming we are experiencing.

*Global warming refers to the increasing average global temperature since the Industrial Revolution (the term commonly refers to the mainly human-caused warming)

Climate change refers to natural fluctuations in the Earth's average temperature between cold periods (ice ages) and warm periods. Anthropogenic climate change refers to the rise in global temperatures because of human activities and the many impacts this rise has on the planet, such as melting glaciers and ice sheets, rising sea levels, extreme weather, etc

ABOUT 70% of all anthropogenic greenhouse gas emissions is caused by the burning of fossil fuels. The other **30%** comes from a number of causes:

- deforestation
- industrial agriculture - degrades the soils to the point where the soils leach CO₂
- industrial livestock farming - produces **90 million tonnes** of methane per year and most of the world's anthropogenic **nitrous oxide**. Both of these gases are more potent (much stronger) than CO₂ when it comes to global warming

- industrial production of cement, steel and plastic forms
- landfills - pump out huge amounts of methane - **16%** of the world's total.

methane - a hydrocarbon (an organic compound consisting of hydrogen and carbon)/often found as the main part of natural gas

manure - dung/waste excreted from animals (faeces)

tonnes - a unit of mass (1 tonne = 1 000 kilograms)

nitrous oxide - commonly known as laughing gas - it is a colourless non-flammable gas at room temperature. At elevated (high) temperatures, nitrous oxide releases oxygen that supports the burning of flammable substances

Swiss cow feed causes fewer farts - and puts the squeeze on global warming (Cecile Mantovani, 3 October 2018)

Biere, Switzerland (Reuters) - Cows burp and fart more than they need to, says a Swiss firm that has developed a feed that cuts methane emissions from livestock - helping to combat global warming into the bargain. A single cow produces the equivalent of about three tonnes of carbon dioxide per year, says Agolin, based in Biere near Lausanne. Co-founder and managing director Kurt Schaller told Reuters its specialist feed can reduce that by 10 percent.

<https://www.reuters.com/article/us-climatechange-swiss-cows/swiss-cow-feed-causes-fewer-farts-and-puts-the-squeeze-on-global-warming-idUSKCN1MD151>





Would you eat insects to save the planet from global warming? (Jessica Brown,

15 October 2018)

Reducing our meat intake is crucial to avoiding climate breakdown, since food production accounts for about a quarter of all human-related greenhouse gas emissions, and is predicted to rise. In western countries, this means eating 90% less beef and five times as many beans and pulses. Edible insects have been hailed as a solution to both global food shortages and reducing emissions from animal agriculture, but despite the industry's best efforts, our response when faced with a cockroach is disgust.

<https://www.theguardian.com/commentisfree/2018/oct/15/edible-insect-save-planet-global-warming-tasty-trendy>

Eating insects has long made sense in Africa. The world must catch up (Saliou Niassy

& Sunday Ekesi, 10 January 2017)

<http://theconversation.com/eating-insects-has-long-made-sense-in-africa-the-world-must-catch-up-70419>

FOUR EARTHS

It has been said that if everyone on the planet consumed as much as the average American citizen, about *four Earths* would be needed to sustain all of us. The world's population use varying amounts of the planet's resources. A rural small-scale farmer in the global South uses much less than a wealthy city dweller in the global North (of course *within* 'rich' and 'poor' countries there are also **disparities**). More land is required to grow the city dweller's food; more materials are used to build her or his home and workplace and where she or he shops; more land is required to grow the city dweller's food; more energy is used to transport that food, clothing and other products she or he may buy; and more energy is required for heating and cooling (think of the large amount of energy used for homes and workplaces that are cooled using air-conditioners and heated using central heating - all year round!).

The Global Footprint Network (GFN) has been attempting to measure the impact of humans on the planet since 2003. *Ecological footprinting* is where researchers look at how much land, sea and other natural resources are used to produce what people consume - how many potatoes they eat, how much milk they drink, the cotton that goes into the shirts they wear and so on. They do this by using **published statistics** on consumption and the amount of land or sea used to produce the quantity of goods consumed. "It's a book-keeping approach for resources," says GFN director and co-founder Mathis Wackernagel. The key questions for GFN, he says, are: "If there is one planet - how much planet is available per person and how much planet do we use per person." The answers are expressed in an unusual unit - *the global hectare*, defined as a biologically productive hectare with world-average **bioproductivity**.

How many Earths do we need? (By Charlotte

McDonald, 16 June 2015)

<http://www.bbc.com/news/magazine-33133712>

Earth Overshoot Day marks the date when we (all of humanity) have used more from nature than our planet can renew in the entire year. *In 2018, it fell on August 1.*

We are using 1.7 Earths.

We use more ecological resources and services than nature can **regenerate** through overfishing, overharvesting forests, and emitting more carbon dioxide into the atmosphere than ecosystems can absorb.

<https://www.overshootday.org/>

Interestingly, the USA does not consume the most on this measure, but it still over-consumes as discussed in this video: <https://www.youtube.com/watch?v=7knPYg5S4hY>

What if everyone lived like Americans?

24 August 2017

50 BILLION TONNES

50 billion tonnes is the amount of life forms and materials (like livestock, fish, wood, minerals, metals, etc) we can safely use each year without destroying the web of life. We currently use 80 billion tonnes each year - that's 60% over the safe limit!

disparities - differences/inequalities
published - in writing (usually based on research)
statistics - data/figures/numbers
bioproductivity - how many (much) biological goods are produced, such as food for human consumption
regenerate - renew/rejuvenate/start again
irreversible - it cannot go back to how it was/permanent
imminent - about to happen/soon
extinct(ion) - destroyed/wiped out/died and no more will be born
monitored - checked
exceed - go beyond/are more than
frequency - how often
severity - how bad
prolonged - extended/very long

extinct every 24 hours.

80% + PEOPLE IN URBAN AREAS AFFECTED BY AIR POLLUTION

More than **80%** of people living in urban areas, where air pollution is **monitored**, are exposed to air quality levels that **exceed** World Health Organisation (WHO) limits. The most polluted towns and cities in South Africa are concentrated in the provinces of Gauteng and Mpumalanga.

600 MILLION CHILDREN AND WATER STRESS

“By 2040, 1 in 4 children - **600 million children** - will live in areas of extremely high water stress,” Anthony Lake, Executive Director of U.N. children’s agency UNICEF says in a new report, *Thirsting for a Future*.

FOUR OF THE NINE PLANETARY BOUNDARIES CROSSED

In 2009 a group of Earth system and environmental scientists led by Johan Rockström (Stockholm Resilience Centre) and Will Steffen (Australian National University) came up with the concept of planetary boundaries*. There are nine Earth system processes which have boundaries - this ensures a “safe operating space for humanity” in order for all life forms on the planet to live sustainably. According to the scientists, once human activity has crossed or gone beyond the ‘planetary boundaries,’ there is a risk of “**irreversible** and abrupt environmental change”*.

* United Nations Secretary-General’s high-level panel on global sustainability (2012). **Resilient people, resilient planet: A future worth choosing (pdf) (Report)**.

New York: United Nations. p. 24.

https://en.wikipedia.org/wiki/Planetary_boundaries

* planetary boundaries - when we have passed certain thresholds or tipping points

As of 2019, four boundaries have already been crossed, while others are in **imminent** danger of being crossed. This is why we have triggered the **sixth** mass **extinction** event in planet’s 14 billion year history, with around **200** species now going

210 MILLION PEOPLE HAVE BEEN DISPLACED BY CLIMATE CHANGE, AND THAT’S JUST THE START. IT’S TIME TO ACT

Worldwide, extreme weather events, violent storms, floods and wildfires are quickly increasing in **frequency** and **severity** because of the climate chaos our addiction to fossil fuels is causing. These extremes have forced more than 21 million people from their homes each year since 2008 - around 59,600 people every day, 41 every minute. Millions more have been forced from their homes, unable to access drinking water or grow food, because of so-called ‘slow onset events’ - rising sea levels or **prolonged** droughts.

(Steve Trent: Co-founder of the Environmental Justice Foundation, 10 November 2018)

<https://metro.co.uk/>



TWICE THE GLOBAL AVERAGE

In a world that's warmed 1°C against pre-industrial levels, bringing wildfires, droughts and heatwaves to vast regions of the planet, South Africa has warmed at twice the global average.

Interview: South Africa, climate change 'hot spot' (Kevin Bloom, 7 November 2018)

<https://www.dailymaverick.co.za/article/2018-11-07-interview-south-africa-climate-change-hot-spot/>

2 DEGREES by Kathy Jetnil-Kijiner (Marshall Islands poet and climate activist)

The other night my
1-year-old was a fever
pressed against my chest
Together we wrestled with a thermometer
that read
99.8 degrees
the doctor says
technically
100.4
is a fever
but I can see her flushed face
how she drapes
across my lap, listless
LiPeinam is usually a
wobbly walking
toddler all chunks and
duck footed shaky knees
stomping squeaky yellow
light up shoes across
the edge of the reef
And I think
what a difference
a few degrees
can make
Scientists say
if humans warm the world
more than 2 degrees
then catastrophe will hit
Imagine North American wildfires increasing by 400%
fresh water declining by 30%
animal extinction rising by 20%
thousands, millions
left wandering
wondering
what
happened?
At a climate change conference
a colleague tells me 2 degrees
is a just a benchmark for climate negotiations
I tell him 2 degrees
is a gamble
at 2 degrees my islands, the Marshall Islands
is already under water
this is why our leaders push
for 1.5
Seems small
like 0.5 degrees

shouldn't matter
like 0.5 degrees
are just crumbs
like the Marshall Islands
must look
on a map
just crumbs you
dust off the table, wipe
your hands clean of
Today LiPeinam is feeling better
she bobs around our backyard
drops pebbles and leaves
into a plastic bucket
before emptying them out
and dropping them in again
As I watch her I think about futility
I think about the world
making the same mistakes again and again
since the industrial revolution
since 1977
when a scientist said 2 degrees
was just an estimate
On Kili island
the tides were underestimated
patients sleeping in a clinic with a nuclear history threaded
into their bloodlines, woke
to a wild water world
a rushing rapid of salt
a sewage of syringes and gauze
Later
they wheeled their hospital beds out
left them resting in the sun
they must be
stained rusted our people
creaking brackish from
salt spray and nuclear radiation blasts
so so tired, wandering wondering
if the world will
leave us out to dry in the sun
will they just
dust their hands of us, wipe
them clean
My father tells me that idik
—the Marhalles word for when the tide is nearest an equilibrium
is the best time for fishing
Maybe that's what I'm doing
fishing for recognition
writing the world
willing the world
to find its balance
So that people
remember
that beyond
the discussions
beyond the policy, the statistics
there are faces
all the way out here
there is
a baby
stomping squeaky
yellow light up shoes
across the edge of a reef
not yet
under water.

<https://www.democracynow.org/2016/11/18/marshall-islands-poet-to-un-climate>

Some more science...

Exclusive: Some Arctic ground no longer freezing - even in winter

(Craig Welch, 20 August 2018)

New data from two Arctic sites suggest some surface layers are no longer freezing. If that continues, greenhouse gases from permafrost could accelerate climate change.

<https://www.nationalgeographic.com/environment/2018/08/news-arctic-permafrost-may-thaw-faster-than-expected/>

“Drunken forests” in Alaska are just another sign of melting permafrost

(Nigel Duara, 25 October 2018)

https://news.vice.com/en_us/article/yw98w5/drunken-forests-in-alaska-are-just-another-sign-of-melting-permafrost

Report: India facing worst water crisis in its history

(Democracy Now! 18 June 2018)

India is facing its worst water shortage crisis in its history. That's according to a new report from an Indian government think tank, which says as many as 200,000 people die in India every year from a lack of access to clean water. The report also says 600 million people in India are facing acute water shortages and that 21 Indian cities are expected to run out of groundwater by 2020.

<https://www.democracynow.org/2018/6/18/headlines/report-india-facing-worst-water-crisis-in-its-history>

The water will come: Rising seas, sinking cities and the remaking of the civilised world

(Jeff Goodell, October 2017)

Last year, a study estimated that if carbon emissions continue at present levels, by 2100 sea levels will have risen by as much as 11 feet [3,3528 metres]. Higher sea levels mean higher storm surges, like the nine-foot surge that **inundated** Lower Manhattan and severely affected neighbourhoods in Long Island and New Jersey, but also that low-lying coastal areas, from Bangladesh to Amsterdam, will be underwater in less than a hundred years. It's worth remembering that two-thirds of the world's cities sit on coastlines. In a high-emissions scenario, average high tides in New York could be higher than the levels seen during Sandy [hurricane]. A rise in global sea levels of 11 feet would fully **submerge** cities like Mumbai and a large part of Bangladesh.

The question is no longer if - but how high, and how fast.

London review of books (Vol.40 No.4): Besides, I'll be dead

(Meehan Crist, 22 February 2018)

<https://www.lrb.co.uk/v40/n04/meehan-crist/besides-ill-be-dead>

AIDS, Ebola, West Nile, SARS, Lyme disease and hundreds more that have occurred over the last several decades - don't just happen. They are a result of things people do to nature. **The ecology of disease**

(Jim Robbins, 14 July 2012)

<https://www.nytimes.com/2012/07/15/sunday-review/the-ecology-of-disease.html>

According to the UN Environment Programme, the Earth is in the midst of a mass extinction of life. Scientists estimate that 150-200 species of plant, insect, bird and mammal become extinct every 24 hours. This is nearly 1,000 times the "natural" or "background" rate and, say many biologists, is greater than anything the world has experienced since the vanishing of the dinosaurs nearly 65m years ago. Around 15% of mammal species and 11% of bird species are classified as threatened with extinction.

Protect nature for world economic security, warns UN biodiversity chief

(John Vidal, 16 August 2010)

<https://www.theguardian.com/environment/2010/aug/16/nature-economic-security>

inundated - flooded

submerge - go under water completely

biodiversity - the variety of plant and animal life in the world or in a particular habitat (place)



The populations of some marine species have declined by 49 percent in just four decades, according to one of the most extensive surveys of sea life ever compiled. The Living Blue Planet Report, just released by World Wildlife Fund (WWF) in collaboration with the Zoological Society of London, documents the extraordinary losses, which occurred from 1970 to 2012. Alarming, some fish species were found to have declined by almost 75 per cent. The authors of the report attribute the dramatic population drops to human-driven climate change as well as to habitat loss, overexploitation and pollution. "In less than a human generation, we can see dramatic losses in ocean wildlife - they have declined by half - and their habitats have been degraded and destroyed," said Mr Brad Ack, senior vice president for oceans at WWF. "Driving all these trends are humans actions: from overfishing and resource **depletion**, to coastal development and pollution, to the greenhouse gas emissions causing **ocean acidification** and warming." Sea water absorbs 30 to 40 percent of the carbon dioxide released by humans, which changes the ocean's chemical composition and disrupts marine ecosystems. This change in chemical composition is referred to as ocean acidification, although the ocean will not actually become acid-like. Rather, its pH value is changing from slightly basic to more neutral. But such a seemingly small change is enough to affect many creatures. For example, acidification prevents the shells of shellfish from forming.

Half of all marine life lost in 40 years: WWF report

(Jennifer Viegas, 16 September 2015)

<http://www.abc.net.au/news/science/2015-09-16/half-marine-life-lost-in-40-years/6779912>

depletion - making less and less of

ocean acidification - the ongoing decrease (getting less) in the pH of the Earth's oceans, caused by the uptake of carbon dioxide from the atmosphere

oozing inhabitability - making life harder and harder to live because it is getting more and more polluted

self-immolation - self-sacrifice/to kill yourself for a purpose (reason)

distressed - very very upset and unhappy

strenuously - very very hard/tirelessly

"Pollution ravages our planet, **oozing inhabitability** via air, soil, water and weather," lawyer David Buckel wrote in the email sent to The New York Times just before he performed an act of **self-immolation** at a park in Brooklyn recently. "Most humans on the planet now breathe air made unhealthy by fossil fuels, and many die early deaths as a result - my early death by fossil fuel reflects what we are doing to ourselves."

Nationally known for his brilliant work championing gay rights, Buckel had been **distressed** by what was happening to the planet for years and was also heavily involved in environmental causes. In his suicide note to the Times, Buckel discussed how challenging it was to change things for the better in the world, even with so many people working so **strenuously** to do so and mentioned how donating to organizations was not enough.

Deciding to bring his life to an end by using fossil fuels for self-immolation to make his point, Buckel's last note read, "Honorable purpose in life invites honorable purpose in death."

Self-immolation as the world burns: An Earth Day report

(Dahr Jamail, 22 April 2018)

<http://www.truth-out.org/news/item/44223-self-immolation-as-the-world-burns-an-earth-day-report>

In Part 3 we try to understand WHY things are the way they are...

Part Two Questions

- 1) What did you learn from Part Two? Make a list.

- 2) What do you think of the science presented? (e.g. I think it's stupid/depressing/frightening, etc, because...)

- 3) List a few scientific facts that you did not know before? What do you think of them?

- 4) Can you think of other scientific facts that are not mentioned? Make a list.

- 5) Have a *debate*: Anthropogenic climate change (Page 17) is here and will only get worse if we do not act now. One team argues in favour of this using the science. The other team (climate change deniers) argue against this.

- 6) Project: The scientific evidence about the ecological crisis is increasing. There are also arguments about the ecological crisis by religious and spiritual leaders. Find out what different religious and spiritual leaders and liberation theologians have to say and what they ask us to do.

- 7) Project (Is Mother Earth angry?): Refer to the following in relation to the concept of Gaia (see Page 4): *The question is no longer if - but how high, and how fast. (The water will come, Page 21).* You will need to find out more about Gaia in order to answer this.

- 8) Make a list of things you would like to learn more about.



More readings:

Deadly climate 'instability': 2018 another year of record-setting heat

The last four years have been the hottest on record, with 2018 being the fourth-hottest, according to data released Monday by the Copernicus Climate Change Service (C3S), one of the services provided by the European Union's Copernicus Programme. (Sputnik, 8 January 2019)

<https://sputniknews.com/environment/201901081071285567-deadly-climate-instability-record-setting-heat/>

Global warming of oceans equivalent to an atomic bomb per second

Seas absorb 90% of climate change's energy as new research reveals vast heating over past 150 years. (Damian Carrington, 7 January 2019)

<https://www.theguardian.com/environment/2019/jan/07/global-warming-of-oceans-equivalent-to-an-atomic-bomb-per-second>

Ancient Antarctic ice sheet collapse could happen again, triggering a new global flood

(Doyle Rice, 20 December 2018)

<https://www.usatoday.com/story/news/2018/12/20/antarctic-ice-sheet-collapse-could-lead-global-flood/2375523002/>

Reindeer now smaller and lighter due to climate change, study finds

(Euronews & AP, 25 December 2018)

<https://www.euronews.com/2018/12/25/reindeer-now-smaller-and-lighter-due-to-climate-change-study-finds>

10 worst-case climate predictions if we don't keep global temperatures under 1.5 degrees celsius

(Lorraine Chow (Truthout), 2 January 2019)

<https://www.ecowatch.com/worst-case-climate-predictions-2624959003.html>





Okuhle age 12



Nina age 6

PART 3: WHY?

In Part 2 we looked at the ecological crisis. Now we ask 'why' is there one. What is the underlying cause of this crisis?

industrialism extract over-consume
CAPITALISM Individualism **WASTE**
neoliberalism the bottom line/profits market (il)logic
dirty human foot and fingerprints all over our natural resources
too much for some/not enough for others competition



Climate action is way off course in all but one [India] of the world's 20 biggest economies, according to a report that shows politicians are **paying more heed to** the fossil fuel industry than to advice from scientists

Among the G20 nations 15 reported a rise in emissions last year, according to the most comprehensive stock-take to date of progress towards the goals of the Paris climate agreement*.

G20 nations still led by fossil fuel industry, climate report finds

Coal, oil and gas subsidies risking rise in global temperatures to 3.2°C, well beyond agreed Paris goal (Jonathan Watts, 14 November 2018)

<https://www.theguardian.com/environment/2018/nov/14/g20-nations-still-led-by-fossil-fuel-industry-climate-report-finds>



* The Paris Agreement is an agreement within the United Nations Framework Convention on Climate Change. It is about decreasing greenhouse gas emissions and global warming

Scientists estimate that emissions from just 90 companies contributed for nearly 50% of the rise in global mean surface temperature since the end of the Industrial Revolution.

According to a paper published in the Climate Change academic journal in September 2017 emissions traced to these 90 carbon producers contributed approximately "42-50% of the rise in global mean temperature" over the 1880-2010 period.

They also massively contributed to the observed rise in atmospheric CO₂ - whose increase is responsible for global warming - and to the rise of global sea level, according to the paper.

Eighty-three of those companies produce coal, oil and natural gas, while the remaining 7 are cement manufacturers.

The research also highlighted that seven investor-owned and seven majority state-owned companies were consistently among the top 20 largest individual company contributors.

Here are the companies most responsible for global

warming: Study (Alice Tidey, 1 August 2018)

<https://www.euronews.com/2018/08/01/here-are-the-companies-most-responsible-for-global-warming-study>

Climate change denial was part of an overall ideology to justify the profiteering of Big Oil. Denialism may start to reach the end of its political usefulness as climate change increasingly **upends** our lives.

Climate change should make the Republican party impossible (Nicholas Powers, 21 November 2018)

<https://truthout.org/articles/climate-change-should-make-the-republican-party-impossible/>



PLANET



PROFITS



PEOPLE

The global economic system promotes and relies on *growth* at all costs - the kind of growth it promotes is part of an unequal system of exploitation of the poor and working class, women, people of colour, and entire ecosystems. It makes a few people rich and leaves the majority of people materially poor. It depletes natural resources and threatens and destroys plant and animal life.

In many global South countries, in which many people go to bed hungry, without shelter and/or jobless, it is very difficult to argue *against* the notion of 'growth and development'. Of course, every person, community and country needs to grow and develop, but not in the way that has been presented to us as the only way (as in the "there is no alternative" way). We need to ask *who really benefits* from governments' and business people's version of 'growth and development'? And *at what cost* to the planet and all who live on it (their cultures, languages, livelihoods, ways of living and being...) does 'growth and development' come under the current global economic system?

Our economy is at war with many forms of life on earth, including human life. What the climate needs to avoid collapse is a **contraction** of humanity's use of resources; what our economic model demands to avoid collapse is **unfettered** expansion. Only one of these sets of rules can be changed, and it's not the laws of nature.

This changes everything (Naomi Klein, 2014)

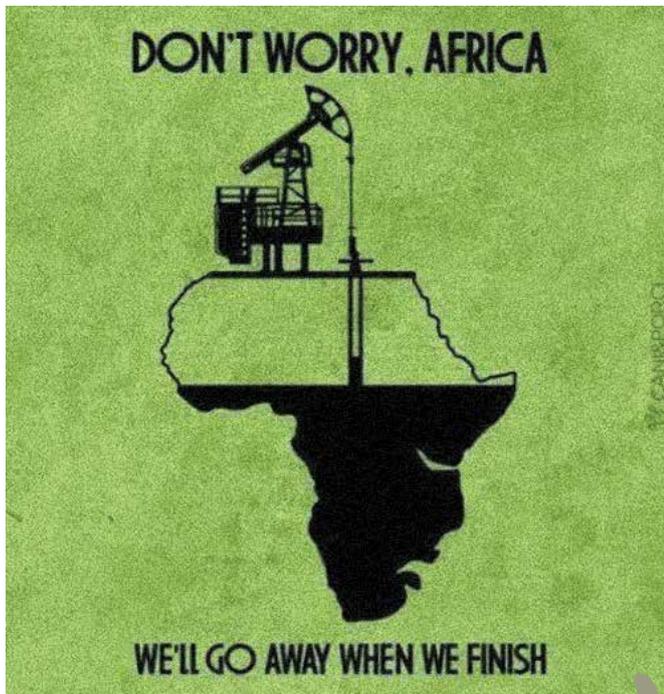
paying more heed to - paying attention to/listening to

upends - turns it upside down/upsets it

contraction - reduction/use less of

unfettered - boundless/endless/no restrictions





Here are some examples:

Indonesia's most polluted river (101 East, Al Jazeera, 3 May 2018)

For generations, Indonesia's Citarum River has provided fish to eat, irrigation for rice fields, and fresh water for drinking, washing and cooking for the millions who live along its banks. But today, it's known as the most polluted river in the world. The river supplies water to textile factories that make clothes for some of the biggest fashion brands in the world - H&M, Gap, Uniqlo. It also provides an open sewer for the factories to dump toxic chemicals, thousands of litres at a time, creating an ecological disaster.

Fishermen used to make a living from the Citarum, but now the only thing they catch is plastic.

"There are no more fish here, because the water is too polluted. There are none left," says Rudi, who now spends his days collecting plastic bottles. Each day he picks up more than 50kg of plastic. Nour, a mother of two young children, uses water from the river to wash clothes, do the dishes and wash vegetables. "The colour of the water - sometimes it's black, sometimes it's red," she says. Nour says her two children are always sick. She blames the river.

<https://www.aljazeera.com/programmes/101east/>

The people of Kwanyana do not want this foreign cow - this mining. If you, MRC*, have a different animal you are welcome to bring it along for us to examine. And if the herd (the community) accepts that is fine. But do not bring this mining beast back because it is only going to cause conflict in the herd. We need a proposal that brings us together. Also you must understand that we who are born here, and have grown up here we know what is best for our land. So you must not treat us like children.

The late Sampson Gampe (Sigidi Village elder - part of the Amadiba Crisis Committee (ACC). The ACC was formed in 2007 by five villages on the Wild Coast, Eastern Cape, to fight open cast mining on their land).

(Amandla! Ulutsha, Issue 10, 25 April 2018)

*MRC is an Australian stock exchange-listed company - Mineral Commodities Ltd.

'We will oppose mine, even if they kill us'

(Lubabalo Ngcukana, 29 April 2018)

"This is mining for the sake of the profit of an Australian mining company, and not a particularly reputable one either but rather with a very dodgy record in Africa, Asia and South Africa in the Western Cape. Although the Xolobeni people might appear poor, they have a good quality of life and they are happy with their lives. They love their land. They are saying, you can keep your mining jobs. We want to keep our land and keep our lives and keep the way we have been living for generations. We don't want to lose our land." (Richard Spoor, lawyer)

<https://m.news24.com/SouthAfrica/News/we-will-oppose-mine-even-if-they-kill-us-20180428>

High court rules in favour of Xolobeni community in historic mining rights case (Alex

Mitchley, 22 November 2018)

The minister of mineral resources will have to obtain full and formal consent from the Xolobeni community prior to granting mining rights, the Pretoria High Court ordered on Thursday.

<https://mg.co.za/article/2018-11-22-high-court-rules-in-favour-of-xolobeni-community-in-historic-mining-rights-case>

Papua New Guinea's forests are being destroyed

Is the government of Papua New Guinea turning a blind eye while the country's forests are destroyed? (Andrew Thomas, 12 January 2018)

Environmental groups say Papua New Guinea's government is sitting back while the country's rainforests are being destroyed. The Pacific nation has just overtaken Malaysia to become the world's biggest exporter of tropical hardwood. Politicians and officials have been accused of being too close to the logging companies and of taking bribes to help deals go through.

<https://www.aljazeera.com/news/2018/01/papua-guineas-forests-destroyed-180112120748640.html>

Boracay closure highlights ugly side to tourism boom in Southeast Asia (Mercedes Hutton, 10 April 2018)

Southeast Asia's beaches have been in the spotlight for all the wrong reasons recently, with the closure of Boracay, in the Philippines, and Thailand's Maya Bay (of 2000 film *The Beach* fame) drawing attention to the trappings of too much tourism. Elsewhere in the region, the outlook isn't much rosier. Phuket welcomed a record 8.4 million visitors in 2017, an increase of 11.3 per cent on the previous year, according to market research provider C9 Hotelworks. That is a lot of people for an island with a population of 500,000, and they bring with them not insignificant amounts of rubbish. Online portal Phuket News reported on March 25 that the island's **incinerators** were unable to keep up with the volume of waste received during high season, leading to the build-up of a "trash mountain".

<http://www.scmp.com/magazines/post-magazine/travel/article/2141025/boracay-closure-highlights-ugly-side-tourism-boom>

incinerators - a machine such as an oven with a chimney or a drum where waste is burned

affluent - a stream or river that flows into a larger stream or main stem river or a lake. It is also called a tributary

residues - a small amount that remains after the main part has gone or been taken or used

An indigenous student's view on oil contamination in the Peruvian Amazon (Elisvan Greffa Yumbo, 30 April 2018)

I listened to the story of Mr. Benjamín Cariajano, an elder 72-year old man. He told us about how life before the oil company arrived, and how the population of the community had a healthy life and consumed water from the river without getting sick. They lived happily, hunting, fishing in the river and their lakes, and they did not have health problems as they do now. With the arrival of the oil company OXY IN ANDOAS, oil exploitation and water pollution began in the Pastaza, Corrientes and Tigre rivers. In the community of San Juan de Bartra, which is located in the Montano stream (**affluent** to the Tigre) and which also passes through the Montano lake where 29 oil wells were installed. Once the oil wells were installed along the Tigre river, the wastewaters and petroleum **residues** started to be deposited into the water and so the contamination began. With the rains, this pollution flowed from the Montana stream to the Tigre river. In between 1980 and 1982, pollution was at its peak as spills began in the oil blocks and reached the river, staining the surface of the water black. Fish and animal species began disappearing as they drank the contaminated water. The first to die were the fish and animals. The birds that feed on the fish and all the birds that live along the banks of the river died. Next, began the death of people and in between 1980 and 1982, twelve people from the community of Vista Alegre died. Among the twelve people were two of Mr. Benjamín's children, ages 5 and 4. It was a great tragedy and many people also became sick, marked with spots on their faces. During these times, people did not know why they were dying, children bathed in water with oil and painted each other with oil. They didn't know what it was. As the water and soil became contaminated, so started to appear diseases which people had never had before, and which they didn't know how to heal. The shortage of food also began: people couldn't find animals, there were no fish, and if there were, they were sick, thin and dying. The animals ran out. This situation was disastrous for the local population, said Benjamín. A woman called Arminda Sandi Tuitui informed us that there were no diseases such as malaria before. She told us that the state gave indigenous lands to the oil company

with all its inhabitants, contaminated the rivers and abandoned them. They do not receive support from the local or national state. When they realized the water was contaminated, people looked for water in the most remote areas of the community, which had not been touched by the contamination. Currently the community needs help to fight diseases caused by the contamination of their water.

<http://www.truth-out.org/opinion/item/44317-i-travelled-to-the-tigre-river-an-indigenous-student-s-view-on-oil-contamination-in-loreto>



Kenule Beeson 'Ken' Saro-Wiwa (10 October 1941-10 November 1995) was a Nigerian writer, television producer, environmental activist, and winner of the Right Livelihood Award and the Goldman Environmental Prize. Saro-Wiwa led a non-violent campaign against environmental degradation of the land and waters of Ogoniland by the operations of the multi-national petroleum industry, especially the Royal Dutch Shell company. He was also an outspoken critic of the Nigerian government, which he viewed as reluctant to enforce environmental regulations on the foreign petroleum companies operating in the area. He was tried by a special military tribunal and hanged in 1995.

https://en.wikipedia.org/wiki/Ken_Saro-Wiwa

The system and the people who own and control it are to blame

Billionaires are the leading cause of climate change

As the world faces environmental disaster on a biblical scale, it's important to remember exactly who brought us here (Luke Darby, 11 October 2018)

This week, the United Nations released a **damning** report. The short version: We have about 12 years to actually do something to prevent the worst aspects of climate change. That is, not to prevent climate change

- we're well past that point - but to prevent the worst, most **catastrophic** elements of it from **wreaking havoc** on the world's population. To do that, the governments of Earth need to look seriously at the forces driving it. And an honest assessment of how we got here lays the blame squarely at the feet of the 1 percent. Contrary to a lot of **guilt-tripping pleas** for us all to take the bus more often to save the world, your individual choices are probably doing very little to the world's climate. The real impact comes on the industrial level, as more than 70 percent of global emissions come from just 100 companies. So you, a random American* consumer, exert very little pressure here. The people who are actively **cranking up** the global thermostat and threatening to drown 20 percent of the global population are the billionaires in the boardrooms of these companies.

... But the scope goes far beyond merely **sowing dissent** and **skepticism**. While billionaires and the companies they run have spent years insisting that climate change either doesn't exist or is **overblown**, they've known the reality of the situation for a long time.

<https://www.gq.com/story/billionaires-climate-change>

*this article was written about America but could be about any country

Stop misdiagnosing climate change

So what's the real source of our planetary self-destruction? It's growth-dependent capitalism (Diana Stuart & Ryan Gunderson, 12 October 2018)

<https://www.commondreams.org/views/2018/10/12/stop-misdiagnosing-climate-change>

Everything you've been told about plastic is wrong - the answer isn't recycling

Recycling is an easy **cop-out** for governments and large corporations, but the truth is that we have to take very different action if we want to stop irreversibly poisoning the planet (Sirena Bergman, 21 September 2018)

<https://www.independent.co.uk/voices/plastic-waste-wish-recycling-bins-black-environment-green-shopping-a8548736.html>

Please see Derrick Jensen's article [Forget shorter showers](#) at the end of this booklet.

damning - it suggests very strongly that maybe we got it wrong before or were not told the truth or were deliberately misled based on 'new' information

catastrophic - disastrous/tragic

wreaking - causing

havoc - chaos/destruction/devastation

guilt-tripping - make one feel bad about something

pleas - appeals or cries

cranking up - turning up

sowing dissent - to create a difference of opinion/create conflict

skepticism - doubt that something is true

overblown - exaggerated/overstated

misdiagnosing - wrong finding or conclusion

cop-out - excuse/escape/use as a way round something

in sync with - are similar to each other

Capitalism is all about making people want to consume and consume some more - so there needs to be lots of 'stuff' and in order to make the stuff, extraction needs to happen and it needs to keep happening. Consumerism is about making people *buy or want to buy* things for the sake of it (to be happier, to be 'cool', keep up with the Jones', smell nicer or be a better parent, etc etc etc) and not because people actually need the things. It promotes a throw away system, caring nothing for what and how it extracts to make the stuff or how it then discards and wastes it. *Consumerism relies on 'buy now, pay later' credit* in the form of bank or shop cards and loan sharks. And for many people, the 'pay later' takes on a whole new meaning - either people are blacklisted or they live in debt from which they can never recover. *Consumerism relies on marketing and advertising* to make people believe that having more material things or 'stuff' will make them happier (see further below for how this is, in fact, a lie). Today capitalists/marketers can sit back and watch others do their work as marketing now includes 'influencer marketing' which allows for so-called 'influencers' (those users who have a large following on social media platforms like Facebook, Instagram, etc) to partner with brands that are **in sync with** their lifestyles. The idea is that the brands will then reach millions of potential users through the 'influencer'.

The Story of Stuff (2007) is a video which looks at how people produce and consume things or 'stuff'. It shows us the connections between environmental and social issues.

<https://storyofstuff.org/>

Black Friday, which started in the USA and has spread globally has been called 'capitalism's holiday'. It is a day when shops sell selected items for much lower prices than usual. People often run into shops when the doors open (after waiting in queues all night); push and shove each other, and have fist fights over items they want to buy.

Total number of recorded deaths: 11

Total amount of injuries: 117

<http://blackfridaydeathcount.com/>

As the saying goes: "They don't make 'em like they used to." Yes, on purpose! *Consumerism relies on planned obsolescence* *. Using planned obsolescence, products' life-cycles are deliberately shortened so that a product will have to be discarded and a new product bought in its place sooner than one should really need to buy one. There are numerous examples of this, the most well-known probably being that of the light bulb. Business owners in places like the United States of America deliberately reduced the lifespan of such things as light bulbs and nylon stockings (and many other products) to ensure that consumers keep consuming (this happened round the 1950s but can be traced back even earlier).

- The *Centennial Light* bulb still faintly shines in a fire station in Livermore, California, USA. It was made in 1901 and somehow escaped being destroyed like all the others.
- The garment industry deliberately re-manufactured nylon to make the stocking fragile by reducing its quality. They wanted it to 'ladder' and tear so that consumers would need to keep buying them. The original nylon was so strong that it can be used in ropes for mountain climbers and for towing cars and also for parachutes. The same principle applies to fashion - different things are 'in or out of fashion', for example dress lengths or heel heights change all the time, so there is constant buying of different 'stuff'.

- More recent examples include computer printers and the iPod battery (two brothers made a short film in 2003 about an iPod battery 'dying' after 18 months of use):

iPod's Dirty Secret (Casey and Van Neistat)

<https://www.youtube.com/watch?v=SuTcavAzopg>

* Stop Planned Obsolescence (Halte à l'Obsolescence Programmée (HOP)) is a French organisation committed to 'promoting alternative economic models around reuse, repair and recycling'

<https://www.halteobsolescence.org/>

That *happiness* thing...

More 'stuff' DOES NOT EQUAL more happiness. Of course this does not mean that not having enough 'stuff' is the opposite of this argument. *Having enough* is the opposite of this argument as in *Enough is as good as a feast* (Neville Alexander). Alexander reminded us that we just need 'enough' to lead happy and fulfilled lives - people do not need an abundance of material things in order to be content. In the last 20 years in many so-called developed countries where people have acquired much 'stuff', there has also been an increase in people feeling unhappy, isolated and lonely. Medication to help people cope has increased.



Our life is **frittered** away by detail...
simplify, simplify.

Henry David Thoreau (1817-1862)

Earth has supported life for 3.5 billion years. Natural disasters have triggered at least five mass extinctions in the past 500 million years, each of which wiped out between 50 and 90 percent of all species on the planet. The most recent extinction happened about 65 million years ago when dinosaurs were wiped out by what many scientists believe was a huge **comet** or **asteroid**. Now we are on our way to the sixth mass extinction, caused by humans. Humans and all other living creatures will suffer it too.

It is time for systemic change and if we do nothing, Mother Earth will continue to do *something* because we have caused her **immense** harm - people have ripped her up, **plundered**, destroyed and polluted all that we should **revere** and respect (as we once did). The Earth is **finite**. It has limits. Many have forgotten (many have been made to forget through Western schooling and education, the media, politicians and business people) what many wise people taught us all those years ago - humans are part of Nature, not apart from it.

frittered - wasted

comet - an icy small solar system body that, when passing close to the sun, warms and begins to release gases. A comet has an 'atmosphere' which has a part called the coma and another called the tail

asteroid - a small planet

immense - huge/very very big

plundered - looted/stolen, typically using force

revere - look up to/admire

finite - fixed/does not go on forever

A forest is not just a collection of living trees - it is itself alive. The soil is not just a medium in which life grows; the soil is alive. So is a river, a reef, and a sea. Just as it is a lot easier to degrade, to exploit, and to kill a person when one sees the victim as less than human, so too it is easier to kill Earth's beings when we see them as unliving and **unconscious** already. The **clearcuts**, the **strip mines**, the drained swamps, the oil spills, and so on are inevitable when we see Earth as a dead thing, **insensate**, an **instrumental** pile of resources.

Initiation into a living planet (Charles Eisenstein, 10 September 2018)

<https://charleseisenstein.net/essays/initiation-into-a-living-planet/>

Either we slow down voluntarily or climate change will do it for us. We can't go on ignoring the laws of nature. But rethinking our theory of progress is not only an ecological **imperative**, it is also a development one. If we do not act soon, all our hard-won gains against poverty will evaporate, as food systems collapse and mass famine re-emerges to an extent not seen since the 19th century. This is not about giving anything up. And it's certainly not about living a life of voluntary **misery** or **imposing** harsh limits on human **potential**. On the contrary, it's about reaching a higher level of understanding and consciousness about what we're doing here and why.

Forget 'developing' poor countries, it's time to 'de-develop' rich countries (Jason Hickel, 23 September 2015)

<https://www.theguardian.com/global-development-professionals-network/2015/sep/23/developing-poor-countries-de-develop-rich-countries-sdgs>

unconscious - opposite of conscious/not awake or aware

clearcuts - when every tree is cut down and removed from an area

strip mines - surface mining where soil and rock overlying (covering) the mineral deposit are removed, in contrast to underground mining

insensate - unconscious

instrumental - useful

imperative - very important

misery - despair/very hard

imposing - forcing

potential - what is possible/what you can do

woefully - sadly

Progress is **woefully** slow because to date the only strategy for reducing poverty is to increase global GDP* growth. Politicians, economists and the development industry all have no other ideas. But GDP growth doesn't really benefit the poor - or the majority of humanity, for that matter. Of all the income generated by global GDP growth between 1999 and 2008, the poorest 60% of humanity received only 5% of it. The richest 40%, by contrast, received the rest - a whopping 95%. So much for the trickle-down effect.

It will take 100 years for the world's poorest people to earn \$1.25 a day (Jason Hickel, 30 March 2015)

<https://www.theguardian.com/global-development-professionals-network/2015/mar/30/it-will-take-100-years-for-the-worlds-poorest-people-to-earn-125-a-day>

*GDP - Gross Domestic Product is a monetary measure of the market value of all the final goods and services produced in a period of time, often annually or quarterly. The economic performance of a country or region is measured using GDP estimates

*\$1 (American dollar) = approximately R14

The work of subsistence workers in agriculture (or women working in the household) is not included in GDP since their production is outside the commodity market. If an oil tanker hits an iceberg causing an oil spill, GDP increases, due to all the cleanup costs, insurance payments, and lawyer fees. However, there is no deduction in GDP for the effects of the oil spill on the environment.

Climate change is the product of how capitalism "values" nature (C.J. Polychroniou, 18 November 2018)

<https://truthout.org/articles/climate-change-is-the-product-of-how-capitalism-values-nature/>

In Part 4 we look at what it is we can do...



Part Three Questions

- 1) What have you learned from Part Three? Make a list.

- 2) Group discussion: In two groups (for example, in the form of a role play or debate, etc), explore the meaning of *growth* and *development* - one group looks at the meaning of these terms as used by those in positions of political and economic power. The other group looks at how these concepts deepen inequality and injustice.

- 3) Find your own example that shows how 'ordinary' people are harmed by the pollution of water and/or land and/or air caused by economic activities. Using this example, write a letter to a newspaper (or equivalent paper/newsletter - school, university, college, workplace) in which you argue against 'profits over people and planet'.

- 4) Discussion: *Enough is as good as a feast*. Make a list of all the things you **need** and all the things you **want**? Within a group discuss the difference between *needs* and *wants* and link the discussion to good ecological living. You can connect this discussion with questions such as: How many cell phones/computers/clothes/cars do you really need in a lifetime?

- 5) Project: Find places in your community/village/town/city where second-hand goods (furniture, clothes, etc.) are sold. Write a letter to your local newspaper in which you explain why supporting second-hand shops could be important to the sustainability of the Earth.

- 6) Make up your own questions here.



More readings:

How white colonizers set us up for uncontrollable wildfires (Louise Dunlap (YES! magazine), 3 December 2018)

<https://www.resilience.org/stories/2018-12-03/how-white-colonizers-set-us-up-for-uncontrollable-wildfires/>

Until we confront capitalism, we will not solve the climate crisis (Anton Woronczuk, 16 December 2018)

<https://truthout.org/articles/until-we-confront-capitalism-we-will-not-solve-the-climate-crisis/>

In 1993 my agency warned of climate change. In 1995 it was abolished

The US Office of Technology Assessment should be revived - in 2019 the world will need its expertise more than ever. (William Westermeyer, 27 December 2018)

<https://www.theguardian.com/commentisfree/2018/dec/27/1993-agency-climate-change-abolished-office-technology-assessment>



PART 4: WHAT TO DO?

In Part 3 we looked at why we are in an ecological and social crisis. Now we ask: what can we do?

IT CANNOT BE **BIZ*** AS USUAL

The science alone tells us the Earth will simply not cope and life as we know it will cease to exist. Climate change is not only about the climate. It is about the system.

*biz - business

IT CANNOT BE BIZ AS GREEN AND NEW TECHNOLOGY

Capitalism can no more be 'persuaded' to limit growth than a human being can be 'persuaded' to stop breathing. Attempts to 'green' capitalism, to make it 'ecological', are **doomed** by the very nature of the system as a system of endless growth.

(Murray Bookchin, 1990)

Green capitalism and new technology are part of adapting to rather than acting against in order to change. We need a system that is about need, not about want, desire and greed. 'Green' efforts (as described below) should continue and/or start (if they have not yet begun), **BUT** these efforts will not save life as we know it - we need SYSTEM CHANGE in order to save our Earth and everyone and everything in it (in Part 6 there are a number of examples of what various people, groupings and organisations are doing around the world).

To reduce their carbon footprint, many people do some or all of these things...

...use public transport, ride a bicycle or walk, 'carpool' (a few people in one car rather than one person), drive a **hybrid**/electric **car**, use LED light bulbs, use solar power, recycle, re-use, repair, plant vegetable gardens, **compost** food waste, turn the tap off when brushing teeth, buy local, buy food that is organic and **unprocessed**, eat less meat, take cloth bags to the shops instead of using plastic or paper ones, not use straws...*Vanuatu walks the talk - and becomes first country to ban plastic straws*

<https://asiapacificreport.nz/2018/05/15/vanuatu-walks-the-talk-and-becomes-first-country-to-ban-plastic-straws/>

...read things electronically rather than printing them; wash clothes in cold water and hang them to dry rather than putting them in a tumble dryer; harvest (collect) rain water...and the list goes on.

NOTE: In the capitalist system, some of the things (above) are applicable to people who are wealthier and who can live a particular lifestyle, i.e. they have enough money to buy organic food (which is expensive) and/or they can buy an electric car.

While we SHOULD do as much as we can, our contribution to changing things on a big scale (by doing some or all of the above) is *tiny*...

And it is very important to understand that the climate chaos* we now face (which has been caused by a small number of people compared to the large majority *who suffer the effects of it*) is not an individual's problem to be fixed or solved - it is not personal - **it's SYSTEMIC** and it needs a complete overhaul of the global economic system - an overhaul of the way things are produced and consumed.

* a term coined by grassroots movements

doomed - will definitely fail

hybrid car - it uses more than one means of propulsion (to get it to go) - that means combining a petrol or diesel engine with an electric motor. The main advantages of a hybrid are that it should use less fuel and give off less CO₂ than a similar vehicle that uses petrol or diesel

compost - organic matter that has been decomposed in a process called composting. This process recycles various organic materials which would otherwise be thought of as waste products and produces a soil conditioner (which helps to improve the soil's properties, adding slow-releasing nutrients)

unprocessed - unrefined/nothing bad has been added/natural

detrimental - harmful/devastating/disastrous

sanctuaries - nature reserves or preserves. A place of safe-keeping for something (the ocean and its life in this case)

desalination (oceans) - a method where the natural water cycle's processes of evaporation from oceans and subsequent condensation are copied using a variety of technical processes to remove salt from brackish or salt waters to produce clean water

Presently some governments, scientists and businesses are doing things to manage what is going to be a **detrimental** crisis if left unattended - there are ocean **sanctuaries, desalination** plants, wastewater that is recycled, carbon offsetting*, etc. The Svalbard Global Seed Vault is a secure seed bank on the Norwegian island of Spitsbergen, about 1 300 kilometres from the North Pole. The vault **preserves** a wide variety of plant seeds that are duplicate samples or 'spare' copies of seeds held in gene banks* worldwide. If there is a large-scale crisis, such as predicted by many climate scientists, it is hoped the seed vault will protect and maintain seeds.

*a carbon offset is a reduction (decrease/make less) in emissions of carbon dioxide or greenhouse gases made in order to compensate for or to offset (balance) an emission made elsewhere

*gene banks are a type of **biorepository** which preserve genetic material. For plants, this could be by **in vitro** storage, freezing cuttings from the plant, or stocking the seeds e.g. in a seedbank

There are already many businesses looking at ways to manage the crisis and make money while doing so, such as:

Climeworks: The ambitious startup out to reverse climate change by capturing carbon* from the air (Nick Lavars, 13 October 2018)

Christoph Gebald and Jan Wurzbacher, two engineering graduates from ETH Zurich, founded Climeworks in 2009 on a mission to make carbon capture economically viable.

<https://newatlas.com/climeworks-carbon-capture-startup-climate/56743/>

*carbon dioxide removal (CDR) is about the large-scale removal of carbon dioxide from the atmosphere

Would flooding the deserts help stop global warming?

The idea is "risky, unproven, even unlikely to work," according to Y Combinator*. But if it did work, it could slow climate change (James Rainey, 11 November 2018)

Imagine flooding a desert half the size of the Sahara. Using 238 trillion gallons of desalinated ocean water to do the job. Creating millions of 1-acre-square micro-reservoirs to grow enough **algae** to **gobble up** all of Earth's climate-changing carbon dioxide.

For an **encore**: How about spreading the water and fertilizer (the dead algae) to grow a vast new forest of oxygen-producing trees?

<https://www.nbcnews.com/news/us-news/would-flooding-deserts-help-stop-global-warming-n934551>

*a Silicon Valley venture capital firm (company)

preserves - protects/keeps for a long time (safe from harm or destruction)

biorepository - a biological materials repository (storehouse) that collects, processes, stores and distributes biospecimens (samples of material, such as urine, blood, tissue, cells, etc) to support future scientific investigation

in vitro - conserving (keeping) parts of plants in flasks or tubes in particular environments and under particular conditions

algae - large, diverse group (different to each other) of aquatic (water) organisms

gobble up - eat up

encore - after/something at the end of

Ocean Cleanup's 2,000ft net deployed at Great Pacific Garbage Patch* (Stephen Johnson, 16 October, 2018)

A 2,000-foot-long floating pipe connected to a submerged net arrived Tuesday at its destination in the Pacific Ocean where it will begin collecting massive amounts of plastic. The system belongs to the Ocean Cleanup Foundation, a Dutch environmental startup that's aiming to remove 90 percent of the Great Pacific Garbage Patch - the largest of the world's five ocean trash patches - by 2040.

<https://bigthink.com/surprising-science/giant-net-cleanup-pacific-garbage-patch?rebellitem=2#rebellitem2>

*there is a huge, swirling pile of trash (rubbish) in the Pacific Ocean, which is growing faster than expected, and is now three times the size of France. It is about 1.6 million square kilometres in size - it is more than double the size of Texas in the United States of America



The Ocean Cleanup suspended as device breaks down in Pacific Ocean (Eleanor Gibson, 7 January 2019)

A **fracture** in The Ocean Cleanup's "giant Pac Man", dispatched to scoop up waste from the Pacific Ocean, has forced the company to **abort** the mission and **haul** the apparatus back to shore.

<https://www.dezeen.com/2019/01/07/ocean-cleanup-suspended-pacific-plastic/>

fracture - break

abort - stop

haul - tow/pull

While these examples show us that people, organisations and governments are doing something, it is important to remember this:

Until you dedicate your life to making socially just decisions, don't fool yourself that planting one tree a year, composting at home or riding a bicycle will somehow help save the environment.

Why the fight for environmental justice is also a fight for social justice (Nityanand Jayaraman, 5 June 2017)

<https://thewire.in/environment/world-environment-day-social-justice>

Clean energy won't save us - Only a new economic system can

It's time to pour our creative energies into imagining a new global economy. Infinite growth is a dangerous **illusion** (Jason Hickel, 15 July 2016)

When it comes to climate change, the problem is not just the type of energy we are using, it's what we're doing with it. What would we do with 100% clean energy? Exactly what we are doing with fossil fuels: **raze** more forests, build more meat farms, expand industrial agriculture, produce more cement, and fill more landfill sites, all of which will pump deadly amounts of greenhouse gas into the air. We will do these things because our economic system demands endless **compound growth**, and for some reason we have not thought to question this.

... The root problem is the fact that our economic system demands ever-increasing levels of extraction, production and consumption. Our politicians tell us that we need to keep the global economy growing at more than 3% each year - the minimum necessary for large firms to make **aggregate** profits. That means every 20 years we need to double the size of the global economy - double the cars, double the fishing, double the mining, double the McFlurries and double the iPads. And then double them again over the next 20 years from their already doubled state.

<https://www.theguardian.com/global-development-professionals-network/2016/jul/15/clean-energy-wont-save-us-economic-system-can>

Better technology isn't the solution to ecological collapse

We cannot **innovate** our way out of planetary disaster. We need to **ditch** our **addiction** to GDP growth (Jason Hickel, 26 March 2018)

There are lots of ways to get there. We could start by ditching GDP as an indicator of success in favor of a more balanced measure like the Genuine Progress Indicator, which accounts for negative "externalities" like pollution and material depletion. We could roll out a new money system that doesn't pump our system full of interest-bearing debt. And we could start thinking about putting caps on material use, so that we never extract more than the Earth can regenerate. The old generation of innovators believed that tech would allow us to **subdue** nature and bend it to our will. Our generation is waking up to a more hopeful truth: that our survival depends not on **domination**, but on **harmony**.

<https://www.fastcompany.com/40548564/better-technology-isnt-the-solution-to-ecological-collapse>



illusion - a false idea or belief

raze - destroy

compound growth - growth in income that results/comes from the reinvestment of money over a period of time

aggregate - combined

innovate - make changes in something established, especially by introducing new methods, ideas or products/transform

ditch - get rid of

addiction - dependent on/cannot stop taking it or cannot live without it

subdue - bring under control/conquer

domination - power/control over

harmony - agreement/togetherness

The myth of renewable energy (Derrick Jensen, 12 December 2016)

Why Bother?

I got a note just the other day, where someone said he understands that this culture is killing the planet, then told me his attitude about protecting the earth is, "Why bother? I'll just hang out with my friends in the time we have left." This is the attitude that ties all of the reasons for our **incapacity** to love the planet that is our only home. If your beloved is threatened you act to defend your beloved. That's what love is. You don't just hang out with friends, and you certainly don't act - as too many climate activists and "environmentalists" are doing - to defend the one who is killing your beloved.

It is long past time we transferred our loyalty away from the economy that is ravaging the earth, and back to the living planet. It is long past time we made our loyalty to this planet absolute, and then started to fight like hell to protect it.

https://www.fairobserver.com/region/north_america/climate-change-renewable-energy-environment-headlines-news-01742/

incapacity - inability/failure

blogged - a discussion or informational website published on the World Wide Web - the text entries or posts are often written in an informal diary-style way

futile - useless/going nowhere

decarbonized (decarbonised) - reduced amount of carbon/gases

I'm no longer advocating for clean energy; here's why (J. M. Korhonen, 26 July 2017)

My Finnish* readers will already know that I announced some time ago that I'm done with energy/climate change discussions. I've been following the debate actively since about 2007 and have been writing about it since late 2010. I've written two books about the topic, one of which is translated to five languages, and **blogged** fairly regularly. But now it's time to do something else. The main reason why I'm refocusing is because I think the debate is going nowhere, and I don't want to waste my time on a **futile** project. We are not going to get a **decarbonized** energy system by 2050. We are going to fail the climate targets, probably **by a large margin**, and I suspect that a warming of about 3 degrees centigrade is going to be almost **inevitable**. It's perfectly possible that self-**amplifying** feedback mechanisms under way will amplify this change even more. What this will mean for humans is difficult to assess, but I doubt it's going to be anything good for the vast majority. The global poor will suffer the most, while we here in the rich North may be able - at least in the short term - to **insulate** ourselves from the worst effects and retreat to our own **virtual bubbles** to avoid hearing the cries of the others.

*I always tell my students that if they want real change, they need to be more active politically - that designing "greener" products is good but a bit like **rearranging** deck chairs on board the Titanic*.*

<https://jmkorhonen.net/page/2/>

*Finnish - from Finland

*RMS Titanic was a British passenger ship that sank in the North Atlantic Ocean on 15 April 1912, after bumping into an iceberg during her maiden (first) voyage from Southampton to New York City

by a large margin - percentage/amount

inevitable - certain/it will happen

amplifying - make louder or more

insulate - protect from/cut oneself off from

virtual bubbles - not real/computer-generated spaces

rearranging - moving around/put in different places

Let us think for a moment about the economy and what it means and what it could and should mean...

We go to the word *ECOLOGY*:

The word ecology was coined by the German zoologist Ernst Haeckel, who applied the term oekologie to the "relation of the animal both to its organic as well as its inorganic environment." The word comes from the Greek oikos, meaning "household," "home," or "place to live." Thus, ecology deals with the organism and its environment. The concept of environment includes both other organisms and physical surroundings. It involves relationships between individuals within a population and between individuals of different populations. These interactions between individuals, between populations, and between organisms and their environment form ecological systems, or ecosystems. Ecology has been defined variously as "the study of the interrelationships of organisms with their environment and each other," as "the economy of nature," and as "the biology of ecosystems."

Ecology (Stuart L. Pimm & Robert Leo Smith)

<https://www.britannica.com/science/ecology>



J.C. Kumarappa (1892-1960), a Gandhian thinker and economist, advocated for an *Economy of Permanence*. In an economy of permanence the relationship and interaction between humans and nature is of **paramount importance**. Kumarappa focused on rural India and believed in a **decentralised**, localised economy. He worked on improving village industries that offered a livelihood to millions.

Surely time is quickly running out for all of us to re-imagine 'economy' and to seriously consider the many options 'out there' that focus on collaboration, care and concern rather than competition, plundering and destroying in order to keep enriching a few. There are many examples and ideas of what another kind of 'economy' is/could be. While some of these propose a fairer economy, they still fall within the capitalist frame; others are anti-capitalist. Following we explain a few:

Bhutan's Gross National Happiness Index

In 1972, the 4th King of Bhutan, King Jigme Singye Wangchuck, declared, that "Gross National Happiness is more important than Gross Domestic Product" and since then the idea has influenced Bhutan's economic and social policy. Gross National Happiness (GNH) takes a holistic approach towards notions of progress and takes into consideration non-economic aspects of wellbeing.

Ecological Economics (EE)

Ecological Economics has embraced a collective approach that **envisions** consumers and producers making decisions with reference to the social groups to which they belong. This change in focus has profound implications for our understanding of the way in which societies function and the decisions they make about their organizations, including relationships among their members and within their groups, as well as the **allocation** of their resources. The alternative paradigm was strengthened with the path-breaking work of Elinor Ostrom who received a Nobel Prize for her analysis of the ability of communities to manage effectively their common resources for their own welfare while assuring their conservation. EE, thus, advocates the redesigning of production itself to preserve its renewable resources while also caring for its non-renewable **treasure trove** to ensure a healthy environment. It emphasizes the need for limits to be placed on human activities, raising ethical questions of respect for people and the environment as well as the responsibility of producers to ensure the appropriate and wholesome availability of products.

Radical ecological economics (David Barkin, 16 November 2017)

<http://www.radicalecologicaldemocracy.org/radical-ecological-economics/>

EE also challenges the notion of 'endless growth', acknowledging that the Earth is finite and that trying to grow endlessly (in a 'modern' way under capitalism) will eventually lead to a

breakdown in Earth's economic and ecological systems. This is very much part of the argument made by *Degrowth* scholars and activists who critique the ever-expanding use of resources by global North countries where, overall, more food and energy is consumed than needed and greater waste produced than necessary - all at the expense of global South countries. Degrowthers advocate 'living well' which means all people live within **bounds of sufficiency** rather than a few living with too much and the majority with too little. They promote the idea of increased happiness and well-being not through the consumption of more 'stuff', but through such things as sharing work, buying less (*for those who consume too much*), spending more time dedicated to family, culture, community, art, music and nature.

These ideas are drawn from indigenous ideas and concepts such as *Buen vivir* (Ecuador)/*Vivir bien* (Bolivia). This concept of living well/good living/the simple life refers to the practices and/or visions of indigenous peoples of the Andean region of South America (from the Quechua term *Sumak Kawsay*). Eduardo Gudynas explains that the concept should not be given a Western meaning in his explanation: "With *buen vivir*, the subject of wellbeing is not [about the] individual, but the individual in the social context of their community and in a unique environmental situation."

paramount importance - above all others/most important

decentralised - opposite of 'centralised'/transfer or move away from a single administrative centre to other locations

envisions - sees/imagines

allocation - sharing/dividing/how much each gets

treasure trove - a collection or store of valuable things. In this example it means the things in nature that cannot be replaced/regenerated - the finite things

bounds of sufficiency - within a modest but adequate scale of living/meeting one's needs - not too much nor too little/enough

There are a number of other examples of new, different or 'alternative' economies and economics, such as:

<u>Circular Economy</u>	products go through a regenerative system of repairing, reusing, recycling, upcycling, etc.
<u>Community-based Economics</u> (Community Economics)	initiatives which happen within a community in order to assist community members with something, for example a community gardening project. Initiatives like this are meant to serve as a vehicle for solidarity, emancipation and social change.
<u>Doughnut Economics</u>	Kate Raworth developed an economic model that critiques the addiction to economic growth and balances essential human needs and planetary boundaries. The doughnut is a visual representation of the bounds of human existence: the social foundation needed for wellbeing, below which no-one should fall, and the ecological ceilings of planetary limits which we should not exceed.
<u>Foundational Economy</u>	The late Professor Mick Moran formed a collective of academics who called themselves the Foundational Economy Collective. Their focus is on the idea that it's in the everyday economy where there is most potential for true social regeneration: not top-down cash-splashing, but renewal and replenishment from the ground upwards. For the Foundational Economy authors, focusing on the fundamental value of invisible and unglamorous jobs "restores the importance of unappreciated and unacknowledged tacit skills of many citizens". It's a way of looking at economics from the point of view of people rather than figures, and doing something revolutionary (yet so blindingly obvious) in the process. What is the point of "growth" if the basic elements of a decent life are denied to a large and growing number? <u>What's the point of growth if it creates so much misery?</u> Forget the 'high-skill, hi-tech' obsession: we should invest in everyday services to create a society run for collective good (Lynsey Hanley, 15 October 2018) https://www.theguardian.com/commentisfree/2018/oct/15/we-can-rebuild-economy-foundations-up
<u>Generative Economy</u>	a term coined by Marjorie Kelly to define "a living economy that is designed to generate the conditions for life to thrive, an economy with a built-in tendency to be socially fair and ecologically sustainable".

<u>Gift Economy</u>	giving to others without an explicit agreement for immediate or future rewards (it is therefore different to bartering).
<u>Invisible Work</u> (usually called 'women's work' - work done in the home and community)	presently undervalued by the mainstream (capitalist economic system) and often unpaid or underpaid (yet capitalism relies on it to support its system).
<u>Participatory Economics</u> (Parecon)	an anti-capitalist economic system based on participatory decision-making as the primary economic mechanism for allocation in society (that is, the say in decision-making is proportional to the impact on a person or group of people). Participatory economics is a form of decentralised economic planning involving the common ownership of the means of production.
<u>Sharing or Collective Economy</u>	based on common ownership and/or control of resources. It is about shared creation, production, distribution, trade and consumption of goods and services by different people and organisations.
<u>Solidarity Economy</u>	it is anti-capitalist; a global group of old, new and some emerging groupings who hold in common the idea of a just and sustainable economy which puts people and planet first (examples are co-operatives and worker-managed/controlled organisations/initiatives).
<u>Steady-state Economy</u>	its roots are in classical economics (the stationary state) but today it is associated with the work of Herman E. Daly and discussed in the context of the impacts of economic growth on the environment. An economy can reach a steady state after a period of growth or after a period of downsizing or degrowth. To be sustainable, a steady state economy may not exceed ecological limits.
<u>Subsistence Economy</u>	a non-monetary (no money) economy which relies on natural resources to provide for basic needs, through such things as subsistence agriculture.
<u>Wellbeing Economy</u>	Professor Lorenzo Fioramonti (author of <i>Wellbeing economy: Success in a world without growth</i>): "Everybody believes that growth is a good thing, and simply associates it with a better life. But we must distinguish between good growth and bad growth". A wellbeing economy is one that prioritises natural and social systems and builds development on that. "The wellbeing economy is about putting people and nature first. And realising that without these two, there is no future."

Some of these (in the table) make reference to the Commons which was (and still is in many indigenous communities) a large part of what was vital to ensure and sustain life. The Commons is made up of resources held in common or shared, *not* owned privately. It consists of natural and cultural resources freely accessible to all members of a society. These include air, water, food, land worked co-operatively, genes, plant biodiversity, wildlife, seeds, public spaces, languages, human knowledge and wisdom, technologies, amongst other. Importantly, the Commons respects an Earth that is finite and therefore not pillaged or destroyed. Under capitalism, most of the things that make up the Commons have been commodified as part of capitalism's (il)logic and the Earth is ravaged in the process.

emancipation - liberation/freedom

explicit - clear/obvious

proportional - relative/depending on/corresponding in size or amount to something else

In Part 5 we take a closer look at jobs and climate change...



Part Four Questions

- 1) What did you learn from Part Four?

- 2) Part Four explains 'green' capitalism and new technology. Find two or three examples of 'green' and/or new technology (not written about in the booklet). Examine them and explain why they won't solve the crisis.

- 3) Find out more about the examples from the list of new, different or alternative economic models (Pages 40-42) and their relationship to ecology. Explain how they differ from mainstream economics. This could be presented as a poster or a PowerPoint presentation, etc.

- 4) Discussion: *Re-imagine* the world we want. Drawing from the alternative examples (Pages 40-42), propose different ways (besides GDP) of measuring how a country/society/community is doing. You can even invent your own model!

- 5) Research activities:
 - i. Conduct a study of groups and/or organisations involved in dealing with the ecological issues in your community/town/city/village. Find out how they address the issue and how you could get involved in learning more.
 - ii. Design a community action project: Discuss with a group of friends, family, organisation/s, institution/s, etc. what needs to be done in your community to address the ecological issues. Design a project that shows how you can act in addressing the ecological issues in your community.

- 6) Make a list of things you would like to learn more about.



More readings:

Should we engineer the climate? A social scientist and natural scientist discuss

Nations may soon be desperate enough about global warming to consider deliberately engineering the world's climate.

(Rob Bellamy and Matthew Watson, 25 December 2018)

<https://thewire.in/environment/should-we-engineer-the-climate-a-social-scientist-and-natural-scientist-discuss>

Why should I sacrifice when big companies are to blame for climate change?

(Eve Andrews, 2 January 2019)

<https://grist.org/article/why-should-i-sacrifice-when-big-companies-are-to-blame-for-climate-change/>

One person's recycling won't stop climate change in itself. We must act collectively

It is liberalism's most dangerous lie that an individual's action can solve problems of this scale.

(Emily Mulligan, 2 January 2019)

<https://www.theguardian.com/commentisfree/2019/jan/02/one-persons-recycling-wont-stop-climate-change-in-itself-we-must-act-collectively>



PART 5: JOBS AND CLIMATE CHANGE

In the global South many argue that we should not be talking about people having to live with less as many many people already live with too little. So when we talk about the ecological crisis, climate change and global warming (and we hear such things as “Leave the oil in the soil, the coal in the hole and the tar sands in the land!”*), many people are afraid the changes we may have to make will result in them losing their jobs or livelihoods (think about the millions of miners in South Africa if we “leave the coal in the hole”...).

*from Nnimmo Bassey’s poem I will not dance to your beat, which he read at the opening ceremony of the World People’s Conference on Climate Change in Bolivia on 20 April 2010 (the poem can be found after Part 6).

Defending jobs

South Africa defends use of coal as it seeks progress on climate

Deputy energy minister defends country’s use of coal as a way to reduce poverty (Anna Hirtenstein, Mathew Carr & Brian Parkin, 12 November 2018)

South Africa’s deputy energy minister [Thembisile Majola], expects the latest round of climate talks will make global markets cleaner starting next year and defended her nation’s coal use as a way to reduce poverty.

... The industrialised West is responsible for most of the emissions that have led to climate change, but emerging countries are catching up fast. Some poorer nations argue that they shouldn’t have to bear an equal amount of the cost and should still be allowed to prioritise economic growth over pollution reduction. A key element of the Paris agreement that was signed in 2015 by nearly 200 nations was the promise for the developed world to transfer \$100 billion a year by 2020 to the developing world to support them in transitioning their energy, industrial and agriculture systems. South Africa is looking for progress on that goal.

“There can’t be a transition that’s one-size fits all, we need a transition that brings everyone along because there are different levels of pollution,” Majola said.

<https://www.bloomberg.com/news/articles/2018-11-12/south-africa-defends-use-of-coal-as-it-seeks-progress-on-climate>

Many ecological activists and scholars argue that ‘old’ jobs will be replaced with new ones (and many more new ones) - see, for example, AIDCs *One million climate jobs**. Moving South Africa forward on a low-carbon, wage-led, and sustainable path (for more information refer to the [Useful Resources](#) list at the end of this booklet).

*there is a difference between climate jobs and green jobs.

An example of a green job could be a waste water worker or someone who works in wildlife conservation (the job may be ‘green’ but it still operates within the present economic system). While a waste water worker and a conservationist are important jobs, they do not stop climate change. A climate job helps stop climate change; these jobs are publicly-driven and are about creating a sustainable, low-carbon future. They operate within an alternative economic model, such as degrowth (see Part 4). For more on alternative economic models and systems, refer to the end of Part 4.



And holding onto existing jobs might not even be possible as the following shows:

Climate change threatens SA's prized protea

Livelihood of thousands in industry threatened
(Guy Rogers (Weekend Post), 10 November 2018)

South Africa's national flower is under threat from climate change, **upping the ante** for thousands of people working in the protea industry.

"I put my two children through school with the money I earned selling flowers, especially the proteas. People want them for funerals and their houses, and during the big matches like in the World Cup all the foreigners were here and they wanted them.

I used to earn R1,000 a week from selling flowers here. Now the money is next to nothing. I know about climate change and the fires. When I see them [fires] on the TV I know it is going to burn the fynbos and soon there will be no proteas left". Sheila Jayiya (she has been selling flowers on the street in Port Elizabeth for 26 years)

"The protea industry employs about 3,000 people directly and supports about 15,000, including **dependents**". Dr Gerhard Malan (protea consultant)

Flower seller feeling the effect

(Guy Rogers (Weekend Post), 10 November 2018)

upping the ante - increases the chances of something (in this case loss of livelihoods/unemployment)

dependents - people who rely on you (for example, children, the elderly, extended family)

consultant - a person who provides expert advice professionally

hailed - welcomed/approve of

degradation - the condition or process of degrading or being degraded/getting worse and worse (for example a loss of dignity in people)

agenda - plan/what they want

Does it have to be *either or*? Here are some examples of what workers are doing globally:

Spain to close most coalmines in €250m* transition deal

Agreement with unions includes early retirement for miners, re-skilling and environmental restoration (Arthur Neslen, 26 October 2018)

Spain is to shut down most of its coalmines by the end of the year after government and unions struck a deal that will mean €250m (£221m*) will be invested in mining regions over the next decade.

... Unions **hailed** the mining deal - which covers Spain's privately owned pits - as a model agreement. It mixes early retirement schemes for miners over 48, with environmental restoration work in pit communities and re-skilling schemes for cutting-edge green industries.

<https://www.theguardian.com/environment/2018/oct/26/spain-to-close-most-coal-mines-after-striking-250m-deal>

*€1 (Euro/European Union) = approximately R16

*£1 (British pound) = approximately R18

Trade Unions for Energy Democracy (TUED) is a global, multi-sector initiative to advance democratic direction and control of energy in a way that promotes solutions to the climate crisis, energy poverty*, the **degradation** of both land and people, and responds to the attacks on workers' rights and protections... It has become increasingly clear that the transition to an equitable, sustainable energy system can only occur if there is a decisive shift in power towards workers, communities and the public.

The goals of the project are:

- Help build and strengthen a global trade union community for energy democracy. TUED is a platform for trade unions from all sectors and countries to debate, develop and promote real solutions to the climate crisis, land grabs, energy poverty, and pollution generated by fossil fuels - solutions that can build unions, worker and community power, and advance social and environmental justice.
- Develop high-impact union educational materials, distribute an electronic bulletin, and convene meetings and working retreats that encourage

debate and help create a shared analysis of key energy and climate issues.

- Connect the energy democracy agenda to union struggles and campaigns in ways that build broad membership engagement, increase worker power, and facilitate solidarity across movements that share similar goals.

* despite more energy being generated every year, energy poverty remains a serious global issue - 1.6 billion people, or 20% of the world's population, do not have regular access to electricity

<http://unionsforenergydemocracy.org/about/about-the-initiative/>

RESIST, RECLAIM AND RESTRUCTURE

A trade union strategy for *energy democracy* can be built around three broad objectives, namely the need to *resist* the **agenda** of the fossil fuels corporations; the need to *reclaim* to the public sphere parts of the energy economy that have been privatized or marketized; and the need to *restructure* the global energy system in order to massively scale up renewable energy and other safe low-carbon options, implement energy conservation, and ensure job-creation and true sustainability.

<http://unionsforenergydemocracy.org/wp-content/uploads/2013/12/Resist-Reclaim-Restructure.pdf>

Iron & Earth is a worker-led not-for-profit (in Canada).

- We are committed to empowering oil and gas, coal and indigenous workers to build a renewable energy economy.
- We are energy workers, and are excited to build renewable energy projects.

<http://www.ironandearth.org/>

passive bystanders - inactive spectators/people who stand and watch and do nothing

safeguard - protect

formulate - work out/put together/draw up

conceptions - ideas

Renewable energy is necessary, but not at expense of jobs, says SAFTU (SAFTU, 2 June 2018)

The South African Federation of Trade Unions condemns the privatisation of energy generation to capitalist companies and supports NUMSA's call for the social ownership of the renewable energy project.

SAFTU is in favour of using renewable resources - sun, wind and water - to generate electricity and reduce the reliance of coal, which is both non-renewable and harmful to the environment and the health of the people around coal-fired power stations.

But this must be done in a way known as a "just transition" to environmentally friendly energy generation, in a way that protects the livelihoods of mining and energy workers and the lives of communities most affected by environmental pollution.

Capitalism is the cause of global warming, climate change and the destruction of our ecosystem, and the workers must not have to pay the price for their bosses' irresponsibility, by losing their jobs in mines and power stations, as a result of handing over power generation to IPPs*, which is a process towards the privatisation of Eskom altogether.

Governments, employers, and workers are not **passive bystanders**, but rather agents of change, who are able to develop new ways of working that **safeguard** the environment, for present and future generations, eradicate poverty and promote social justice by fostering sustainable enterprises, and creating decent work for all."

The federation welcomes the idea of a Red-Green Alliance between workers and environmentalists, but fully agrees with Professor Jacklyn Cock, an authority on both labour and environmental issues, that "The labour movement must own the process, undertake research on alternative job creation and **formulate** clear demands on the state. It must challenge dominant **conceptions** of a just transition that re-packages capitalism through notions like the 'green economy', or 'green capitalism'."

<http://saftu.org.za/renewable-energy-is-necessary-but-not-at-expense-of-jobs-says-saftu/>

*independent power producer

In Part 6 many 'ordinary' people show us what they are doing and how...

Part Five Questions

- 1) What did you learn from Part Five? Make a list.

- 2) Discussion: When dominant ideas are challenged, people in power often use the ideology of fear as a way to protect these ideas. In the case of challenging ecologically-damaging sources of energy, powerful people may raise things such as job losses as one form of fear. Organise a discussion with a group of friends or colleagues or fellow students about the implications when coal mines are closed. Use this discussion to generate ideas of *other forms of work* that people could get involved with.

- 3) Research project: Investigate the variety of jobs that are associated with alternative forms of energy. Write a short article about your research to share with friends, family, colleagues, fellow students and/or the public.

- 4) Make up your own questions here.



PART 6: ACTION.

WHAT ARE 'ORDINARY' PEOPLE DOING?



All over the world, in rural and urban areas, in a variety of ways, people, both young and old are doing something about the ecological crisis which is all around us, whether we see it and acknowledge it, whether we see it but refuse to acknowledge it, or whether we simply do not see it. Following are inspiring examples of critique, hope and action ...

Let's start with the youth:

How a group of young Colombians successfully sued their government to act on climate

A **swift** victory in the Colombian Supreme Court could pave the way for further legal action around the world, as young people increasingly take their climate concerns to court (Sophie Yeo, 24 April 2018)

In Colombia, a group of 25 children and young people have just made legal history: They successfully put their government on trial for causing climate change and thereby endangering the fundamental rights of its citizens.

Colombia's Supreme Court agreed with the young **plaintiffs** that the government had done too little to halt deforestation in the Amazon, despite its commitment to achieve net-zero deforestation by 2020. This, the justices decided, amounted to a threat to the plaintiffs' rights to a healthy environment, life, health, food, and water. The judges ordered

the presidency and the Ministries of Environment and Agriculture to create an "**intergenerational pact** for the life of the Colombian Amazon" within five months, and to formulate short-, medium-, and long-term goals to tackle deforestation. The court also recognized that the Amazon itself has rights, and that the state also has a duty to conserve and protect them.

<https://psmag.com/environment/young-colombians-sued-their-government-to-act-on-climate>

swift - very quick

plaintiffs - the people who bring a case against another in a court of law

intergenerational pact - an agreement between generations (older and younger people)

Do the youth of the mountains matter?

As a new tunnel connects the remote Lahaul valley with the rest of India for the first time, young people search for development on their own terms (Kesang Thakur, 20 April 2018)

Vikram Katoch, a 29 year old man from Tandri village of Lahaul, is a passionate advocate of ecological tourism. In 2017, Vikram put all his energies into building his first campsite in his village, after having gained six years of work experience with several

multinational travel companies in Delhi. "I was really homesick. It is very sad that even skilled and educated youth have less opportunities to earn bread and butter in the mountains. Youth should **innovate** to find means to earn at home," said Vikram. For him, innovation means to develop thoughtful tourism: investing in second hand tents, creating a library of donated books for travellers and local children, organising client-villagers' interactions, and devising other creative ways to offer an **immersive** travel experience in Lahaul.

Not everyone thinks like Vikram. In fact, many imagine Lahaul as a high end tourism destination with 'world class' facilities. Tourists, especially paise wale (those with money) seek big hotels with comforts and locations that are easily accessible. In this respect, Vikram had no 'world class' facilities at his disposal, and the first year put his marketing skills to test. He was pleasantly surprised with the client turnout, clients who not only appreciated his **frugal** camp, but those who shared similar **sensibilities** and visions about the future. "We cannot afford to make Lahaul like Manali. We don't have to experiment with energy intensive evils like **hydroprojects**, mass tourism and unplanned construction. We have to make sure that we don't sacrifice our natural resources for the sake of somebody's greed", asserted Vikram.

<https://www.thethirdpole.net/en/2018/04/20/do-the-youth-of-the-mountains-matter/>

Celebrating indigenous peoples effort to protect forests, and the planet (Ecologise.in, 21 April 2018)

Pressures on the world's forests continue to build. From palm oil and soy plantations, to **timber logging**, cattle grazing and mineral mining, our growing population is demanding more and more from these resource rich areas. And while legislation is **keeping** some of the threats **at bay**, the majority of the world's forests are continuing to face challenges to their existence. Amidst these pressures, some areas of land are being razed to the ground while others are still standing. Why? Deforestation has been found to be five times higher outside of indigenous territories and conservation units, according to a recent study by RAISG (The Amazon Network of Georeferenced Socio-environmental Information). In other words - the indigenous communities living and working within the forest are

proving to be the best **line of defence** against deforestation. Using their **extensive** knowledge of the forest ecosystem, these communities are using sustainable practices to live in a way that protects - and even regenerates - the land. Although they account for just 4% of the global population, they protect more than 80% of the world's biodiversity (source: World Bank). By **cultivating** clean waterways, tackling forest fires, and restoring the habitats needed for rare species, they bring the land back into balance - and keep it that way. This work doesn't just protect the forest - it supports the planet. Forests act as a carbon sink - absorbing and holding on to carbon, preventing it entering the atmosphere and contributing to climate change. This stored carbon is released into the atmosphere when trees are logged and burned, making it all the more critical that forests are left standing.

As much as 24% of the carbon stored above ground in the world's tropical forests - an amount that is more than 250 times the global air travel emissions of 2015 - is found in indigenous territories. Thanks to indigenous communities, this carbon is being kept in the ground, and complex ecosystems and rare species are being given a chance to thrive.

<https://www.ecologise.in/2018/04/21/international-day-of-forests-how-indigenous-peoples-are-protecting-the-planet/>

multinational - a company that operates in several countries

innovate - invent/come up with things/be creative

immersive - involving oneself deeply in a particular activity

frugal - simple and plain/not fancy

sensibilities - feelings

hydroprojects - a project using water to generate electricity

timber logging - the felling (cutting down) of trees in forests

keeping at bay - to control something and stop it from causing problems

line of defence - protection/defence against being attacked

extensive - very wide/large

cultivating - keeping water clean (for example from pollution)

The small Scottish isle leading the world in electricity (Karen Gardiner, 30 March 2017)

In 2008, Eigg became the world's first community to launch an off-grid electric system powered by wind, water and solar - and this group of residents largely taught themselves how to do it. Before that, without access to a national grid, residents relied on noisy, expensive diesel generators that only ran for a few hours a day. The electrification scheme made 24-hour power available to residents for the first time. On average, Eigg runs on 90-95% renewable energy. There are still times, usually in spring, when the weather doesn't cooperate and the use of generators is necessary. Two 70 kW backup generators add power and charge the battery bank. Then there are days, usually in winter, when the island has the opposite problem: it creates more energy than it can use or store. Just as Eigg Electric has to manage its **deficiencies** itself, it has to manage its **surpluses**. Fortunately, it has a system for that too: when there is a surplus of power, electric heaters in the community hall, pier lobby and two churches automatically turn on. This keeps these shared spaces warm all through the winter and requires "virtually no central heating in the system at all," says Booth (a community member). "We don't charge for it because the whole community benefits." It seems fitting that the electric grid's surpluses benefit the community, since the inhabitants were responsible for the electric grid's development. In June, the island will celebrate 20 years of community ownership. Previously, Eigg had a **succession** of landlords; most tenants had no legal **tenure**, making development virtually impossible. In 1997, the Isle of Eigg Heritage Trust, a partnership between the residents, Scottish Wildlife Trust and Highland Council, purchased the island. A few years later, residents began working on the electrification project. Eigg Electric - a **wholly** owned subsidiary of the Trust - was incorporated in 2005. "The whole thing," says Booth, "is run by and for the island." This model of public ownership, as much as the grid itself, has set an example for communities abroad. Last year, Community Energy Malawi visited Eigg. Georgy Davis of the sister organisation Community Energy Scotland says that the group "learned a great deal about what could be achieved by an active and engaged community who have a belief in themselves". The Malawi members

also were "particularly encouraged that people from a non-technical background were able to learn," Davis says. Eigg Electric's six-person, part-time maintenance team is made up of such unlikely candidates as the island's baker, gardener and knitter. Everyone learned how the system works by following the construction company as they built it. "There was not one person on the island who could be described as an electrical engineer," says Booth, a **biochemist** by training. "I just did my homework. Sometimes if a decision had to be made, I'd stay up all night working on it."

<http://www.bbc.com/future/story/20170329-the-extraordinary-electricity-of-the-scottish-island-of-eigg>

isle - small island/land surrounded by water

deficiencies - shortages/what it lacks or doesn't have

surpluses - opposite of 'deficiencies' / extras / too much of something

succession - a number of people following one after the other

tenure - right of occupancy / agreement to occupy

wholly - fully / completely

biochemist - someone who studies chemical processes and chemical transformations in living organisms



African women organize to reclaim agriculture against corporate takeover Women will carry forth the alternatives (Simone Adler & Beverly Bell, 6 January 2016)

Still, traditional farming is practiced in rural areas, such as - Mahayani in Vhavenda, where there are elder women who have the ancestral knowledge of growing food. The alternative is to bring back the role of the woman. Young women and girls have to reconnect to the soil and fields of our grandmothers, the forest near our homes, and the indigenous local seeds. Every woman needs to reconnect to the soil. Women also have to teach young girls and young women about seed and food sovereignty and the importance of soil because they're the ones who will remain to pass that on.

Women are the alternative. We need to revive our technical methods [of farming] through **permaculture** or **agroecology**. Even though the soil has been damaged by chemical fertilizers and chemical seeds, there is opportunity to rebuild, harvest, compost, and work the soil to become alive again. The women of Dzomo la Mupo are bringing food sovereignty to their families. In our home gardens, called muse, and our fields called tsimu, we teach children that food comes from soil, not the market shelves. Women listen to the **ecological calendar** and know the seasons for planting, when to select [certain] seeds, and which will produce food. This is the knowledge of women all over the world. Children no longer know about the ecological calendar. What is the future for if we give that up? If we don't talk about this as women, who will understand? Women have to fight against the complete destruction of the nearby fields, mountains, and rivers so we can again eat the wild fruit and seasonal food. We are the ones who should defend the remaining indigenous forests from vanishing. Women need to fill the role of talking about [and acting on] the threats to a healthy future generation.

<https://grassrootsonline.org/in-the-news/newsarticlesafrican-women-organize-reclaim-agriculture-against-corporate-takeover/>

The twelve days (and months) of Climate Justice Day Two: Winona LaDuke and Sitting Bull at Standing Rock (Winona LaDuke & John Foran, 29 December 2016)

"I am here to advise anyone that will listen that the Dakota Access Pipeline project* is harmful. It will not be just harmful to my people but its intent and construction will harm the water in the Missouri River, which is one of the cleanest and safest river **tributaries** left in the United States. To poison the water is to poison the substance of life. Everything that moves must have water. How can we talk about and knowingly poison water?"

The Standing Rock protest camp represents that struggle for freedom and the future of a people. All of us. If I ask the question "What would Sitting Bull do?" - the answer is pretty clear. He would remind me what he said 150 years ago: "Let us put our minds together to see what kind of future we can make for our children."

The time for that is now.

(Chairman David Archambault II (former tribal chairperson of the Standing Rock Sioux Tribe in North Dakota): quoted in the New York Times)

<http://www.resilience.org/stories/2016-12-29/the-twelve-days-and-months-of-climate-justice-day-two-winona-laduke-and-sitting-bull-at-standing-rock/>

*What is the Dakota Access Pipeline project?

A \$3.78 billion 1,886 km long underground oil pipeline which transports some 470 000 barrels of crude oil a day across four states, from North Dakota to Illinois where it can be shipped to refineries. The project was built by a **subsidiary** of the Texas-based company Energy Transfer Partners (ETP). The Standing Rock Sioux Tribe and their supporters have protested against the Dakota Access Pipeline on the grounds that the pipeline has damaged and destroyed sites of great historic, religious and cultural significance. It is a threat to their land, water, livelihoods and way of life. Despite this, and with **brute** military and police force, the pipeline has gone ahead under President Trump.



permaculture - a system of agricultural and social design principles centered around simulating (copying) or directly using the patterns and features observed in natural ecosystems. It is about working *with* rather than against nature

agroecology - the study of ecological processes applied to agricultural production systems. Agroecologists study a variety of agroecosystems, however agroecology is most often associated with organic farming

ecological calendar - a natural calendar (*what happens when according to nature's cycles*) was and still is a very important tool for living in harmony with one's environment

tributaries - a river or stream flowing into a larger river or lake

subsidiary - a smaller company owned or controlled by a larger company called the parent company

brute - using force in large amounts/very strong and powerful

distress migration - when people leave a place because of issues related to natural and environmental disasters, economic deprivation, or forms of gender and social oppression that are intolerable (i.e. things are so bad that you can't live with what is happening)

lineage - backgrounds/family history

mandatory - compulsory/you must do it

autonomous - independent/self-governing

belying - contradicting/going against what you stand for or say

mining concessions - something that is granted (given): the government has allowed a company or companies the right to mine on a piece of land or lands

repression - the action of subduing someone by force (for example silencing someone)/oppression

transformation due to the feminization of politics, the integration of caring and persuasion rather than brute patriarchal power, as well as the explicit focus on livelihoods, health, and other things that matter to ordinary people. Two successive mayors brought in much greater democracy in decision-making, including through community assemblies. Each village has delegated coordinators, conveying decisions of the village assembly to the Municipality. A significant portion of the budget is allocated for self-planning by each village, whose decisions are **mandatory** for elected representatives at district/municipality level. Villages also apply the principle of solidarity, e.g. lending a part of their budget to another village in greater need.

... The Nabon municipality has declared itself off limits to mining and other destructive activities, using its official status as a 'Decentralized **Autonomous Municipality**'. Unfortunately, the Ecuador government, **belying** its 'revolutionary' image, has given **mining concessions**, including within areas declared protected and crucial for water security. Many community members, including women, who are opposing mining, are facing **repression** and threats. While travelling to villages north of Quito and in discussions with groups like Accion Ecologica, we learnt that other regions and peoples who are protesting against extractivism are facing similar repression.

<http://www.radicalecologicaldemocracy.org/how-an-ecuadorian-community-is-showing-its-government-how-to-really-live-well/>

How an Ecuadorian community is showing its government how to really live well (Neema Pathak Broome & Ashish Kothari, 16 December 2017)

Our first visit was to the Nabón municipality in Azuay Province, with a population of 18,000. Over the last twenty years, a succession of women mayors in Nabon has successfully tackled a dire situation of poverty and **distress migration** in the municipality. They have implemented an agenda of food security, diverse livelihoods, water sustainability, high education levels, and reduction in tension between the indigenous and mestizo (those with mixed ethnic **lineage**, particularly Spanish) peoples. On most human development indicators, there has been a massive improvement. In no small part is this

In Part 7 we look at what we can and should learn...



Part Six Questions

- 1) Did you learn anything new from Part Six? If so, what?

- 2) Discussion: Choose one of the examples in Part Six and find out more about it or find another example not in the booklet. Tell someone else about it (for example, in a presentation or discussion, etc). What can you learn from the example?

- 3) Research projects:
 - a. Investigate (find out) what your family and friends know and do about the ecological crisis. Explore with them possible things that could (still) be done and what their contribution could and should be in the fight for a healthy planet. See below for some *action* ideas.
 - b. Investigate what your community is already doing about the ecological crisis. Implement a plan of activities (e.g. documentary screenings; talks; etc.) that could be used to increase community awareness of and public participation in a campaign towards healthy ecological living. These could form part of your overall plan list in the question in Part Four.

Action can include such things as telling others; creating a play; writing a story, a poem or an article; making up a cartoon strip or a game; creating something using recycled materials; drawing; designing a poster; hosting a discussion; planting a vegetable garden and using the produce for a school (for example); taking to the streets with placards (and there are many others).

- 4) Make up your own questions here.



More readings:

Amazon indigenous groups propose Mexico-sized 'corridor of life'

World's biggest protected area would stretch across borders from Andes to Atlantic.

(Jonathan Watts (Sharm El Sheikh), 21 November 2018)

<https://www.theguardian.com/environment/2018/nov/21/amazon-indigenous-groups-propose-mexico-sized-corridor-of-life>

Claws out: Fishermen sue 30 oil firms over climate change

Fossil fuel companies including Chevron and ExxonMobil 'knowingly caused harm' by contributing to warming, group says.

(Erin McCormick, 14 November 2018)

<https://www.theguardian.com/environment/2018/nov/14/crab-fishermen-sue-oil-firms-exxon-chevron>

Hundreds of students striking over climate change descend on parliament

Students miss school to call on MPs to take emergency action 'because this is our future'.

(Naaman Zhou, 28 November 2018)

<https://www.theguardian.com/australia-news/2018/nov/28/hundreds-of-students-striking-over-climate-change-descend-on-parliament>



I will not dance to your beat

Nnimmo Bassey (previously with Friends of the Earth Nigeria/now with Health of Mother Earth Foundation)



I will not dance to your beat
If you call plantations forests
I will not sing with you
If you privatise my water
I will confront you with my fists
If climate change means death to me but business to you
I will expose your evil greed
If you don't leave crude oil in the soil
Coal in the hole and tar sands in the land
I will confront and denounce you
If you insist on carbon offsetting and other do-nothing false solutions
I will make you see red
If you keep talking of REDD and push forest communities away from their land
I will drag you to the Climate Tribunal
If you pile up ecological debt
& refuse to pay your climate debt
I will make you drink your own medicine
If you endorse genetically modified crops
And throw dust into the skies to mask the sun
I will not dance to your beat
Unless we walk the sustainable path
And accept real solutions & respect Mother Earth
Unless you do
I will not &
We will not dance to your beat



PART 7: WHAT CAN AND SHOULD WE LEARN?

Once again, let's start with the youth, let's listen and learn...

The Swedish 15-year-old who's cutting class to fight the climate crisis

Following Sweden's hottest summer ever, Greta Thunberg decided to go on a school strike at the parliament to get politicians to act (David Crouch, 1 September 2018)

Why bother to learn anything in school if politicians won't pay attention to the facts? This simple realisation prompted Greta Thunberg, 15, to protest in the most effective way she knew. She is on strike, refusing to go to school until Sweden's general election on 9 September to draw attention to the climate crisis. Her protest has captured the imagination of a country that has been struck by heatwaves and wildfires in its hottest summer since records began 262 years ago. Every day for two weeks, Thunberg has been sitting quietly on the **cobblestones** outside parliament in central Stockholm, handing out leaflets that **declare**: "I am doing this because you adults are shitting on my future." Thunberg herself is a **diminutive** girl with **pigtails** and a **fleeting** smile - not the **stereotypical** leader of a climate revolution.

"I am doing this because nobody else is doing anything. It is my moral responsibility to do what I can," she says. "I want the politicians to prioritise the climate question, focus on the climate and treat it like a crisis."

When people tell her she should be at school, she points to the textbooks in her satchel. "I have my books here," she says in flawless English. "But also I am thinking: what am I missing? What am I going to learn in school? Facts don't matter any more, politicians aren't listening to the scientists, so why should I learn?"

<https://www.theguardian.com/science/2018/sep/01/swedish-15-year-old-cutting-class-to-fight-the-climate-crisis>

cobblestones - ground made of naturally rounded stones

declare - state/say

diminutive - small

pigtails - hair tied up in two bunches

fleeting - short period of time/doesn't last long

stereotypical - relating to a widely held but oversimplified image or idea of a particular type of person or thing/of how a person 'should' be (which is often not the case)

folklore - the traditional beliefs, customs, and stories of a community passed through the generations usually by word of mouth

extensions - additions

manifestations - expressions/signs

Modern education, reinforced with communication technologies of television, and now the internet, may not have lived up to the promise of employment, but it has brought in consumerism. The most critical impact of this has been the growing loss of local language, **folklore**, dress, songs, dance, and food, all of which were **extensions** and **manifestations** of the relations between humans, as well as between humans and nature, and a crucial part of community 'identity' as it existed in mountain societies.

In the village that I live in Kangra, Himachal Pradesh, I often see parents immediately discouraging a child who speaks the local language, pushing them to Hindi with English words thrown in. Similar, when children play with mud in the farms or climb trees, pat comes the instruction to "go study and not waste time". Integrating with the outdoor is seen as



useless. Plonking a child in front of a television or handing them a smart phone are now the preferred tools for occupying children.

Will the 'educated' save the environment?

(Manshi Asher, 21 March 2018)

<https://www.thethirdpole.net/en/2018/03/21/will-the-educated-save-the-environment/>

Imagine if cyclists, craftspersons, people living simple lives, and those willing to give their time and products freely were the role models in our schools... not the celebrities whose **glitzy** lifestyles fill the media? Imagine if learning and education systems focused on the dignity of labour, the pleasure of doing something with one's hands, the thrill of seeing someone else happy, the **visceral** feeling of being within nature? Would it then not be possible to bring out the selfless, caring streak in us while retaining our own interests, a sort of responsible individualism? Would we then not create processes of social **regulation** of technologies, frowning on those that increase inequities and ecological havoc? As we move towards a greater sense of planetary oneness (sharpened by the very visible signs of climate and ecological distress the earth is in), these messages may well be heard more widely. We may then face up to the fact that convenience without bounds will create an extremely inconvenient future for all of us.

We are addicted to convenience, and it's a fatal attraction both for us and the planet

(Ashish Kothari, 20 February 2017)

<http://www.vikalpsangam.org/article/addicted-to-convenience/#.WxCWmyb8JLM>

First published by Scroll

glitzy - showy/flashy/not plain

visceral - inside/to do with deep inward feelings

regulation - rules/guidelines

ECOPEDAGOGY

Ecopedagogy is a different way of looking at education to the mainstream - it comes from critical educators in Latin America such as Paulo Freire, Antonia Darder, Moacir Gadotti and Leonardo Boff. It is about re-educating ourselves as we try to create a new world that is about care and respect for each other and our Earth. It asks many questions such as: What kinds of education do we need and what actions do we need to take to bring about a new, better, safer, healthier world for all who live in it?

When teaching and learning (whether formal, non-formal or informal) has nothing to do with understanding the deep and very important connections between people and nature - *that people are part of nature*, it should come as no surprise that many people (adults and children) struggle to understand this (no matter how 'educated' they are).

If we don't learn it in some form, we won't know it.

We owe it to our grandchildren to know it.

Native knowledge: What ecologists are learning from indigenous people

(Jim Robbins, 26 April 2018)

While he was interviewing Inuit elders in Alaska to find out more about their knowledge of **beluga whales** and how the mammals might respond to the changing Arctic, researcher Henry Huntington lost track of the conversation as the hunters suddenly switched from the subject of belugas to **beavers**.

It turned out though, that the hunters were still really talking about whales. There had been an increase in beaver populations, they explained, which had reduced **spawning habitat** for salmon and other fish, which meant less prey for the belugas and so fewer whales. "It was a more **holistic** view of the ecosystem," said Huntington. And an important tip for whale researchers. "It would be pretty rare for someone studying belugas to be thinking about freshwater ecology." Around the globe, researchers are turning to what is known as Traditional Ecological Knowledge (TEK) to fill out an understanding of the natural world. TEK is deep knowledge of a place that has been **painstakingly** discovered

by those who have adapted to it over thousands of years. "People have relied on this detailed knowledge for their survival," Huntington and a colleague wrote in an article on the subject. "They have literally **staked their lives** on its **accuracy** and repeatability." "Westerners have done little but isolate ourselves from nature," said Mark Bonta, an assistant professor at Penn State Altoona who was a co-author on the paper fire and **raptors**. "Yet those who make a point of connecting with our earth in some form have enormous knowledge because they interact with a species. When you get into conservation, [that knowledge] is even more important." Aboriginal people "don't see themselves as superior to or separated from animals. They are walking storehouses of knowledge," he said. The Maya people of Mesoamerica have much to teach us about farming, experts say. Researchers have found that they preserve an **astonishing amount** of biodiversity in their forest gardens, in harmony with the surrounding forest. "The active gardens found around Maya forest villagers' houses shows that it's the most diverse domestic system in the world," integrated into the forest ecosystem, writes Anabel Ford, who is head of the MesoAmerican Research Center at the University of California at Santa Barbara. "These forest gardeners are heroes, yet their skill and sophistication have too long been set aside and devalued." Valuing these life ways is an important part of the process. For the Skolt Sami, writes Mustonen, "seeing their language and culture valued led to an increase in self-esteem and power over their resources." It may not just be facts about the natural world that are important in these exchanges, but different ways of being and perceiving. In fact, there are researchers looking into the relationship between some indigenous people and the very different ways they see the world. Felice Wyndham is an ecological **anthropologist** and **ethnobiologist** who has noted that people she has worked with can **intimately** sense the world beyond their body. "It's a form of **enhanced mindfulness**," she says. "It's quite common, you see it in most hunter-gatherer groups. It's an extremely developed skill base of **cognitive agility**, of being able to put yourself into a viewpoint and **perspective** of many creatures or objects - rocks,

water, clouds. "We, as humans, have a remarkable sensitivity, imagination, and ability to be cognitively agile,"

<https://e360.yale.edu/features/native-knowledge-what-ecologists-are-learning-from-indigenous-people>

native - being born in a particular place or country. In SA the term is not used as it carries a negative connotation (meaning)

beluga whale/s - also called a white whale. It is sometimes called the sea canary because it makes a high-pitched twitter (sound)

beavers - a large rodent (same family as the rat and mouse) which comes out mainly at night and builds dams, canals and lodges (homes)

spawning - the process of releasing eggs and sperm

habitat - place (where the spawning happens)

holistic - full/whole/complete

painstakingly - thoroughly/carefully

staked their lives - this phrase is used for saying that someone is completely sure about something

accuracy - correctness/truth

raptor/s - a bird of prey (for example an eagle or hawk)

astonishing amount - surprising/a large amount

anthropologist - a person engaged in the practice of anthropology. Anthropology is the study of various aspects of humans within past and present societies (for example, their cultures)

ethnobiologist - a person involved in ethnobiology which is the scientific study of the way living things are treated or used by different human cultures. It studies the dynamic relationships between people, biota (plants & animals), and environments, from the past to the present

intimately - closely/very well

enhanced mindfulness - having a greater sense of what is around you - your mind is fully attending to what's happening

cognitive agility - to do with thinking and understanding 'differently' and well

perspective - viewpoint/side



We end with....

Words and Actions from the Wise - “...perhaps [we’ll] listen now”

(Vincent, Don McLean)

No tribe has the right to sell, even to each other, much less to strangers ... Sell a country! Why not sell the air, the great sea, as well as the earth? Didn't the Great Spirit make them all for the use of his children? The way, the only way to stop this evil is for the red man to unite in claiming a common and equal right in the land, as it was first, and should be now, for it was never divided.

Before the **palefaces** came among us, we enjoyed the happiness of unbounded freedom and were **acquainted** with neither riches, wants, nor oppression.

Tecumseh (Shawnee leader, born in present-day Ohio, USA). He worked to build a confederacy (grouping/union) of Indigenous Peoples in the early 19th century to defend their territories against European settlers

The Chipko Movement or Chipko Andolan

On the 26th March 1974 a group of women from *Reni Village, India*, embraced (hugged) trees to stop loggers from chopping them down. This they did after talking failed and the loggers started to shout and abuse the women, threatening them with guns. The women kept an all-night vigil guarding their trees from the loggers until a few of them **relented** and left the village. The next day, when the men and leaders returned, the news of the movement spread to the neighbouring villages and more people joined in. Eventually, after a four-day stand-off, the loggers left. The women's actions inspired hundreds of such actions at the grassroots level throughout the region. This protest led the then Prime Minister, Indira Gandhi, to issue a 15 year ban on felling of trees in the Himalayan region.

palefaces - 'white' people

acquainted - used to/aware of

relented - gave up



Reni Village, India 1974



Hambach Forest 2018

Join us in the Hambacher Forst: For climate justice - *now and everywhere!*

The Hambacher Forst is an ancient forest near the city of Cologne (Germany). The forest is to be clear cut in order to expand a climate-destroying open pit coal mine by RWE* (a company in the electric power industry). There have been ongoing protests and occupations to prevent this since 2012. Every Sunday during a walk in the woods thousands of people send a signal against the destructiveness of RWE and short-sighted politics.

*RWE AG, until 1990: Rheinisch-Westfälisches Elektrizitätswerk AG (Rhenish-Westphalian Power Plant)



Part Seven Questions

- 1) What did you learn from Part Seven? Write down some of your reflections.
- 2) What have you learned from the young people in this booklet or from other young people you may know or have heard/read about who are taking similar actions?
- 3) What role can and should community wisdom and indigenous knowledges play in addressing the ecological crisis? What can and should we learn from these?
- 4) Research project: *Re-imagine education*. How present is the content of the ecological crisis in the education you receive in educational organisations/institutions? What should children/youth/adults be learning? If you could re-imagine education in your educational organisation/institution, *what would it be like?*
- 5) Make a list of questions that you have.

- 6) Now that you have read the entire booklet, what does a polar bear have to do with you? How does the ecological crisis affect YOU?



More readings:

How I starve off despair as a climate scientist

So much warming, so many dire effects, so little action - Dave Reay reveals how dreams of soggy soil and seaweed keep him going.

(Dave Reay, 17 December 2018)

<https://www.nature.com/articles/d41586-018-07765-4>

Interview

Katharine Hayhoe: 'A thermometer is not liberal or conservative'

The award-winning atmospheric scientist on the urgency of the climate crisis and why people are her biggest hope.

(Jonathan Watts, 6 January 2019)

<https://www.theguardian.com/science/2019/jan/06/katharine-hayhoe-interview-climate-change-scientist-crisis-hope>

German coal exit plan will save Hambach Forest, activists say

(DW, 28 January 2019)

<https://amp.dw.com/en/german-coal-exit-plan-will-save-hambach-forest-activists-say/a-47251256>

PICS: 70 000 protesters descend on Brussels to demand action on climate

(Raf Casert, 27 January 2019)

<https://www.iol.co.za/news/world/pics-70-000-protesters-descend-on-brussels-to-demand-action-on-climate-18996268>

'Momentum is growing': Reasons to be hopeful about the environment in 2019

(Fiona Harvey, 2 January 2019)

<https://www.theguardian.com/environment/2019/jan/02/climate-change-environment-2019-future-reasons-hope>





23 October 2018

Open Letter to President Cyril Ramaphosa

Demand for an emergency sitting of Parliament to deliberate on the recently issued UN report on 1.5°C increase in planetary temperature and its implications for South African climate change policy

The Cooperative and Policy Alternative Centre, through and with alliance partners in the South African Food Sovereignty Campaign (<http://www.safsc.org.za>), has been linking the climate crisis and right to food since 2014. We have made efforts to educate the public about the connection between hunger, the drought and price increases in a corporate controlled food system. Our hunger tribunal together with the Human Rights Commission in 2015, food sovereignty festival and activist schools were all about this. Similarly, in 2016 we attempted to make the link between the drought, water inequality and the need for a food sovereignty system. This we did through our drought speak outs, bread march and coal filled coffin left outside the Gupta compound. Through our Peoples' Parliament we also adopted a Peoples' Food Sovereignty Act for South Africa. The latter was handed over to seven government departments and to parliament earlier this year when we also launched a water and climate justice charter process for the country at a Peoples Dialogue on the Water Crisis in Cape Town. Out of nine portfolio committees invited to this dialogue only one person, the Chairperson of the Water Portfolio Committee, attended. Our activism has confirmed a lack of responsiveness and leadership from the South African government regarding the drought and climate change. There is a total disregard for the disproportionate impacts of the drought, as a climate shock, on the unemployed, the working class and the rural and urban poor. This is a crisis of leadership and does not bode well for a climate driven South Africa in which we will be having more extreme weather including droughts, heat waves, floods, wild fires and sea level rise.

The recent UN report (<http://www.ipcc.ch/report/sr15/>) on Global Warming of 1.5°C draws attention to the rapidly changing science on global climate change. It also underlines the imperative of bringing down carbon emissions to prevent catastrophic climate change through a 1.5°C overshoot. The report is clear that we are running out of time and decisive leadership is needed over the next 12 years to prevent such a dangerous shift in the Earth's climate. We believe this report needs to be deliberated through an emergency sitting of parliament as it impacts on the future of all human and non-human life forms in South Africa and on the planet. This is a matter of national interest for all present and future generations and we would like you to consider this demand.

We also believe this parliamentary sitting must consider the implications of the UN report for ensuring South Africa is placed on a climate emergency footing through the following:

- Adjusting its peak, plateau and decline scenarios, which are out of step with the current science on a 1.5°C increase. Drastic reductions in carbon emissions are required now;
- Adjusting the Integrated Resource Plan by removing the ceiling on renewable energy to enable an accelerated shift to socially owned renewable energy;
- Amending the Climate Bill to ensure people driven sustainable development planning is enabled;
- Going beyond government's 'death spiral' of ESKOM approach to restructuring ESKOM to protect the interests of workers while prioritising an end to the climate driven 'death spiral of society' through advancing the deep just transition;
- Immediately ending all new investment in coal mining and fracking;
- Scrapping the existing National Development Plan and developing, in a bottom up manner, a Climate Emergency Plan for South Africa as part of the deep just transition to advance the water, food, energy, production, consumption, transport, financial and health systems that will sustain life.



Your predecessor Jacob Zuma turned his back on Africa, which has and will continue to be hardest hit by climate shocks. Instead he bought into Obama's stillborn 'pledge and review mechanism' entrenched in the Paris Climate Agreement which has not worked. The US, under Trump, has undermined this climate regime through promoting increasing eco-cidal carbon extraction and currently according to the International Energy Agency carbon use and emissions are still accelerating (<https://www.euractiv.com/section/climate-environment/news/bad-news-and-despair-global-carbon-emissions-to-hit-new-record-in-2018-iea-says/>). We need a new way forward that affirms climate justice, generational justice and the future of non-human life forms. In the spirit of Nelson Mandela and radical non-racialism, South Africa needs to display climate justice leadership that can unite every human being to face the difficult challenges of climate change.

Having a parliamentary debate on the UN report on Global Warming of 1.5°C also enables similar engagements to happen at provincial government, local government and ward committee level. The failure to act on our demand unfortunately will leave us with the conclusion that your government is either in climate denial or captured by fossil fuel interests or irrational about the current science of climate change. We look forward to your response.

Endorsed by the following organisations:

Children's Resource Centre
WoMin: WoMin African Gender and Extractives Alliance
GroundWork
Friends of the Earth, SA.
Unemployed People's Movement
Young Women's Forum
Sustainable Innovations Africa
African Centre for Biodiversity
Alternative Information and Development Centre
Media Monitoring Africa
Itumeleng Youth Project
Batlhabine Foundation
Ntinga Ntaba kaNdoda
Wits Inala Forum for Climate Justice and Food Sovereignty
Natural Justice
African Climate Reality Project
Earthrise
Earthlife Africa, Johannesburg
Vaal Environmental Justice Alliance
Active Citizens Movement, Pietermaritzburg
West Coast Food Sovereignty and Solidarity Forum
GreenHouse Project
PHA Food and Farming Campaign
African Earth Rights
Ecobrick Deep South
Support Centre for Land Change
Karoo Environmental Justice Movement
Consumer Action Network
Inspire Elsie
The Land Rights Organisation of South Africa
The Association for Water and Rural Development
SEED
Gender CC Southern Africa-Women For Climate Justice

Landless Peoples Movement South Africa
Biowatch South Africa
Project 90 by 2030
Noordhoek Environmental Action Group
South Durban Community Environmental Alliance
Environmental Monitoring Group
Sustaining the Wild Coast (SWC)
South African Faith Communities Environmental Initiative (SAFCEI)
Midrand Solidarity Economy Education and Communication Cooperative (MSECC)
Global Environmental Trust (GET)
EarthLore Foundation
Save Our Imfolozi Wilderness
Mfolozi Community Environmental Justice Organisation
Youens Attorneys
Mining Affected Communities United in Action
Southern Africa Green Revolutionary Council
Assembly of the Unemployed South Africa
Middleburg Environmental Justice Network

Additional Endorsements:

Federation of Unions of South Africa (FEDUSA)
South African Federation of Trade Unions (SAFTU)
Active Citizens Movement
Equal Education
Newcastle Environmental Justice Alliance
Greenpeace Africa
Loreto Sisters
Waterberg Environmental Justice Forum (WEJF)
Waterberg Women Advocacy Organization
Southern African Faith Communities' Environment Institute

For further information, contact:

Dr. Vishwas Satgar, COPAC Board Chairperson / SAFSC Partner, 082 775 3420
Ferril Adam, COPAC / SAFSC Partner, 074 181 3197
Itumeleng Mogatsui, GreenHouse Project / SAFSC Partner, 073 601 7078

READING (FROM PART THREE)

Forget shorter showers (Derrick Jensen,
7 July 2009)

WOULD ANY SANE PERSON think **dumpster** diving would have stopped Hitler, or that composting would have ended slavery or brought about the eight-hour workday, or that chopping wood and carrying water would have gotten people out of **Tsarist** prisons, or that dancing naked around a fire would have helped put in place the Voting Rights Act of 1957 or the Civil Rights Act of 1964? Then why now, with all the world at stake, do so many people retreat into these entirely personal "solutions"?

Part of the problem is that we've been victims of a campaign of systematic **misdirection**. Consumer culture and the capitalist mindset have taught us to substitute acts of personal consumption (or **enlightenment**) for organized political resistance. An Inconvenient Truth helped raise consciousness about global warming. But did you notice that all of the solutions presented had to do with personal consumption - changing light bulbs, inflating tires, driving half as much - and had nothing to do with shifting power away from corporations, or stopping the growth economy that is destroying the planet? Even if every person in the United States did everything the movie suggested, U.S. carbon emissions would fall by only 22 percent. Scientific consensus is that emissions must be reduced by at least 75 percent worldwide.

Or let's talk water. We so often hear that the world is running out of water. People are dying from lack of water. Rivers are dewatered from lack of water. Because of this we need to take shorter showers. See the disconnect? Because I take showers, I'm responsible for drawing down **aquifers**? Well, no. More than 90 percent of the water used by humans is used by agriculture and industry. The remaining 10 percent is split between municipalities and actual living breathing individual humans. Collectively, municipal golf courses use as much water as municipal human beings. People (both human people and fish people) aren't dying because the world is running out of water. They're dying because the water is being stolen. Or let's talk energy. Kirkpatrick Sale summarized it well: "For the past 15 years the story has been the same every year: individual

consumption - residential, by private car, and so on - is never more than about a quarter of all consumption; the vast majority is commercial, industrial, corporate, by agribusiness and government [he forgot military]. So, even if we all took up cycling and wood stoves it would have a **negligible** impact on energy use, global warming and atmospheric pollution." Or let's talk waste. In 2005, **per-capita** municipal waste production (basically everything that's put out at the **curb**) in the U.S. was about 1,660 pounds. Let's say you're a **die-hard** simple-living activist, and you reduce this to zero. You recycle everything. You bring cloth bags shopping. You fix your toaster. Your toes poke out of old tennis shoes. You're not done yet, though. Since municipal waste includes not just residential waste, but also waste from government offices and businesses, you march to those offices, waste reduction pamphlets in hand, and convince them to cut down on their waste enough to eliminate your share of it. Uh, I've got some bad news. Municipal waste accounts for only 3 percent of total waste production in the United States.

dumpster - a large rubbish or garbage bin/a skip

Tsarist - Russian: a form of autocracy (opposite of democracy) - all power and wealth is controlled and distributed by the Tsar (ruler/leader)

misdirection - the wrong way

enlightenment - learning about/knowing something (so not knowing why in this case)

aquifers - a body of permeable (with holes) rock which can contain or transmit (pass on) groundwater

negligible - tiny/very very little

per-capita - how much per person per day

curb - pavement/sidewalk

die-hard - very determined or devoted/believes in something very strongly

I want to be clear. I'm not saying we shouldn't live simply. I live reasonably simply myself, but I don't pretend that not buying much (or not driving much, or not having kids) is a powerful political act, or that it's deeply revolutionary. It's not. Personal change doesn't equal social change.

So how, then, and especially with all the world at stake, have we come to accept these utterly insufficient responses? I think part of it is that we're

in a double bind. A double bind is where you're given multiple options, but no matter what option you choose, you lose, and withdrawal is not an option. At this point, it should be pretty easy to recognize that every action involving the industrial economy is destructive (and we shouldn't pretend that solar **photovoltaics**, for example, exempt us from this: they still require mining and transportation infrastructures at every point in the production processes; the same can be said for every other so-called green technology). So if we choose option one - if we **avidly** participate in the industrial economy - we may in the short term think we win because we may accumulate wealth, the marker of "success" in this culture. But we lose, because in doing so we give up our empathy, our animal humanity. And we really lose because industrial civilization is killing the planet, which means everyone loses. If we choose the "alternative" option of living more simply, thus causing less harm, but still not stopping the industrial economy from killing the planet, we may in the short term think we win because we get to feel pure, and we didn't even have to give up all of our **empathy** (just enough to justify not stopping the horrors), but once again we really lose because industrial civilization is still killing the planet, which means everyone still loses. The third option, acting decisively to stop the industrial economy, is very scary for a number of reasons, including but not restricted to the fact that we'd lose some of the luxuries (like electricity) to which we've grown **accustomed**, and the fact that those in power might try to kill us if we seriously **impede** their ability to exploit the world - none of which alters the fact that it's a better option than a dead planet. Any option is a better option than a dead planet.

Besides being ineffective at causing the sorts of changes necessary to stop this culture from killing the planet, there are at least four other problems with perceiving simple living as a political act (as opposed to living simply because that's what you want to do). The first is that it's predicated on the **flawed** notion that humans inevitably harm their landbase. Simple living as a political act consists solely of harm reduction, ignoring the fact that humans can help the Earth as well as harm it. We can **rehabilitate** streams, we can get rid of **noxious invasives**, we can remove dams, we can disrupt a political system tilted toward the rich as well as an extractive

economic system, we can destroy the industrial economy that is destroying the real, physical world. The second problem - and this is another big one - is that it incorrectly assigns blame to the individual (and most especially to individuals who are particularly powerless) instead of to those who actually wield power in this system and to the system itself. Kirkpatrick Sale again: "The whole individualist what-you-can-do-to-save-the-earth guilt trip is a myth. We, as individuals, are not creating the crises, and we can't solve them." The third problem is that it accepts capitalism's redefinition of us from citizens to consumers. By accepting this redefinition, we reduce our potential forms of resistance to consuming and not consuming. Citizens have a much wider range of available resistance tactics, including voting, not voting, running for office, pamphleting, boycotting, organizing, lobbying, protesting, and, when a government becomes destructive of life, liberty, and the pursuit of happiness, we have the right to alter or **abolish** it. The fourth problem is that the endpoint of the logic behind simple living as a political act is suicide. If every act within an industrial economy is destructive, and if we want to stop this destruction, and if we are unwilling (or unable) to question (much less destroy) the intellectual, moral, economic, and physical infrastructures that cause every act within an industrial economy to be destructive, then we can easily come to believe that we will cause the least destruction possible if we are dead.

The good news is that there are other options. We can follow the examples of brave activists who lived through the difficult times I mentioned - Nazi Germany, Tsarist Russia, antebellum* United States - who did far more than **manifest** a form of moral purity; they actively opposed the injustices that surrounded them. We can follow the example of those who remembered that the role of an activist is not to **navigate** systems of oppressive power with as much integrity as possible, but rather to confront and take down those systems.

<https://orionmagazine.org/article/forget-shorter-showers/>

(*antebellum - the Antebellum Period in American history is generally considered to be the period before the civil war and after the War of 1812, although some historians expand it to all the years from the adoption of the Constitution in 1789 to the beginning of the Civil War)

See Page 66

photovoltaics - relating to the production of electric current at the junction (where they join) of two substances exposed to light

avidly - enthusiastically/passionately/do it very well

empathy - understanding and feeling for someone or something else

accustomed - got used to

impede - block/get in the way/slow down

flawed - not correct/there is a problem

rehabilitate - the action of restoring (fixing) something that has been damaged back to how it was before

noxious invasives - alien (not from that place) to a particular ecosystem and whose introduction causes or is likely to cause harm to the environment/could be poisonous

abolish - put an end to/stop

manifest - show/display/demonstrate

navigate - usually used when referring to a ship, aeroplane or other form of transport: steer/plan and direct the course of travel or the route (way)



USEFUL RESOURCES

Following is a list of resources you may find useful. There are many others too - some are freely available online.

Books:

Bassey, N. (2015). *Stop the continent grab and the REDD-ification of Africa*. Maputo & Benin City: No REDD in Africa Network.

Bellamy Foster, J. (2002). *Ecology against capitalism*. New York: Monthly Review Press.

Bellamy Foster, J., & Burkett, P. (2017). *Marx and the earth. An anti-critique*. Chicago: Haymarket Books.

Bellamy Foster, J., Clark, B., & York, R. (2010). *The ecological rift. Capitalism's war on the earth*. New York: Monthly Review Press.

Bigelow, B., & Swinehart, T. (Eds.), (2014). *A people's curriculum for the earth: Teaching about the environmental crisis*. Milwaukee: Rethinking Schools.

Boff, L. (1997). *Cry of the earth, cry of the poor*. New York: Orbis Books.

Boff, L. (2015). *Toward an eco-spirituality*. New York: The Crossroad Publishing Company.

Bond, P. (2012). *Politics of climate justice. Paralysis above, movement below*. Pietermaritzburg: University of KwaZulu-Natal Press.

Burkett, P. (2014). *Marx and nature. A red and green perspective*. Chicago: Haymarket Books.

Cock, J. (2007). *The war against ourselves: Nature, power and justice*. Johannesburg: Wits University Press.

Hancox, D. (2013). *The village against the world*. London & New York: Verso.

Healy, H., Martinez-Alier, J., Temper, L., Walter, M., & Gerber, J-F. (Eds.), (2013). *Ecological economics from the ground up*. London & New York: Routledge.

Jamail, D. (2019). *The end of ice: Bearing witness and finding meaning in the path of climate disruption*. New York: The New Press.

Joubert, K., & Dregger, L. (Eds.), (2015). *Ecovillage: 1001 ways to heal the planet*. Dorset: Triarchy Press.

Kahn, R. (2010). *Critical pedagogy, ecoliteracy & planetary crisis. The ecopedagogy movement*. New York: Peter Lang Publishing.

Kempf, H. (2007). *How the rich are destroying the earth*. Vermont: Chelsea Green Publishing Company.

Klein, N. (2014). *This changes everything*. London: Allen Lane.

Kovel, J. (2002). *The enemy of nature. The end of capitalism or the end of the world?* Nova Scotia: Fernwood Publishing/ London & New York: Zed Books.

Lele, S., Brondizio, E., Byrne, J., Mace, G., & Martinez-Alier, J. (Eds.), (2018). *Rethinking environmentalism. Linking justice, sustainability, and diversity*. Cambridge: MIT Press.

Maathai, W. (2010). *Replenishing the earth. Spiritual values for healing ourselves and the world*. New York: Doubleday.

Magdoff, F., & Bellamy Foster, J. (2011). *What every environmentalist needs to know about capitalism*. New York: Monthly Review Press.

Magdoff, F., & Williams, C. (2017). *Creating an ecological society. Toward a revolutionary transformation*. New York: Monthly Review Press.

Mies, M., & Shiva, V. *Ecofeminism*. (2014). London & New York: Zed Books.

Satgar, V. (Ed.), (2018). *The climate crisis. South African and global democratic eco-socialist alternatives*. Johannesburg: Wits University Press.

Shiva, V. (2013). *Making peace with the earth. Beyond resources, land & food wars*. Johannesburg: Jacana.

Solnit, R. (2016). *Hope in the dark: Untold histories, wild possibilities*. Chicago: Haymarket Books.

Solón, P. (Ed.), (2017). *Systemic alternatives: Vivir bien, degrowth, commons, ecofeminism, right of Mother Earth and deglobalisation*. La Paz: Focus on the Global South-Asia, Attac-France & Fundación Solón-Bolivia.

Yona, L. (2016). *Young hope in a dark world: Leverage points for climate action*. Hanover: Dartmouth College.

Booklets:

AIDC. (2013). *Green economy: the long suicide. The different worlds of green jobs & climate jobs*. Cape Town: Alternative Information & Development Centre.
<http://aidc.org.za/download/climate-change/Green-Economy-Booklet-19-Sep-2013.pdf>
Abridged version also available.

AIDC. (2016). *One million climate jobs. Moving South Africa forward on a low-carbon, wage-led, and sustainable path*. Cape Town: Alternative Information & Development Centre.
<http://aidc.org.za/download/climate-change/OMCJ-booklet-AIDC-electronic-version.pdf>

AIDC. (2017). *Climate jobs for a just transition*. Cape Town: Alternative Information & Development Centre.

Cabello, J., & Gilbertson, T. (Eds.), (2015). *Paths beyond Paris: Movements, action and solidarity towards climate justice*. Barcelona: Carbon Trade Watch. <http://www.carbontradewatch.org/downloads/publications/PathsBeyondParis-EN.pdf>

Treat, J. (2010). *Environment and education: Rights and responsibilities*. Book 17. Johannesburg: Education Rights Project. <https://www.uj.ac.za/faculties/facultyofeducation/cert/Documents/Environment%20and%20Education.pdf>

Articles:

Cottle, E. (2017). The myth of a green economy and green jobs: What strategy for labour? *Institute of Social and Economic Research Working Paper Series*, No. 2017/1. Rhodes University. Retrieved from [https://www.ru.ac.za/media/rhodesuniversity/content/iser/documents/The%20Myth%20of%20a%20Green%20Economy%20and%20Green%20Jobs%20-%20Eddie%20Cottle%20\(2017.01\).pdf](https://www.ru.ac.za/media/rhodesuniversity/content/iser/documents/The%20Myth%20of%20a%20Green%20Economy%20and%20Green%20Jobs%20-%20Eddie%20Cottle%20(2017.01).pdf)

Dembicki, G. (January 2019). The next financial crisis could be caused by climate change. *Vice*. Retrieved from https://www.vice.com/en_us/article/59xpxa/the-next-financial-crisis-could-be-caused-by-climate-change

Einashé, I. (September 2018). 'It's time to decolonize environmentalism': An interview with Zina Saro-Wiwa. *Frieze*. Retrieved from <https://frieze.com/article/its-time-decolonize-environmentalism-interview-zina-saro-wiwa>

Foran, J. (March 2016). A few thoughts on studying the most radical social movement of the twenty-first century. *The futures we want: Global sociology and the struggles for a better world*. International Sociological Association. Retrieved from <http://futureswewant.net/john-foran-climate-justice/>

Löwy, M. (December 2018). Why ecosocialism: For a red-green future. *Great Transition Initiative*. Retrieved from <https://www.greattransition.org/publication/why-ecosocialism-red-green-future>

Milman, O. (January 2019). European colonization of Americas killed so many it cooled Earth's climate. *The Guardian*. Retrieved from <https://amp.theguardian.com/environment/2019/jan/31/european-colonization-of-americas-helped-cause-climate-change>

Milman, O. (January 2019). What is the polar vortex - and how is it linked to climate change? *The Guardian*. Retrieved from <https://amp.theguardian.com/us-news/2019/jan/30/polar-vortex-2019-usa-what-is-it-temperatures-cold-weather-climate-change-explained>

Milman, O., Holden, E., & Agren, D. (October 2018). The unseen driver behind the migrant caravan: Climate change. *The Guardian*. Retrieved from <https://www.theguardian.com/world/2018/oct/30/migrant-caravan-causes-climate-change-central-america>

Munsch, M. (December 2018). Why studying climate change made me quit my PhD. *openDemocracy*. Retrieved from <https://www.opendemocracy.net/mathieu-munsch/why-studying-climate-change-made-me-quit-my-phd>

O'Connor, J. (1988). Capitalism, nature, socialism: A theoretical introduction. *Capitalism, Nature, Socialism*, 1(1): 11-38. Retrieved from <http://www.vedegylet.hu/okopolitika/O'Connor%20-%20Capitalism,%20Nature,%20Socialim.pdf>

Out of the Woods (blog): (April 2014). James O'Connor's second contradiction of capitalism. *libcom.org*. Retrieved from <https://libcom.org/blog/james-oconnors-second-contradiction-capitalism-25042014>

Rettner, R. (January 2019). More than 250,000 people may die each year due to climate change. *Live Science*. Retrieved from <https://www.livescience.com/64535-climate-change-health-deaths.html>

Sim, B. (January 2019). Twitter threats, abuse, murder: What women face defending the environment. *openDemocracy 50.50*. Retrieved from <https://www.opendemocracy.net/5050/b-reng-re-sim/murder-rape-twitter-threats-what-women-face-defending-environment>

Swanson, D. (January 2019). The world will end in fire. *Let's Try Democracy*. Retrieved from <http://davidswanson.org/the-world-will-end-in-fire/>

Wallace-Wells, D. (February 2019). 'The devastation of human life is in view': What a burning world tells us about climate change. *The Guardian*. Retrieved from <https://www.theguardian.com/environment/2019/feb/02/the-devastation-of-human-life-is-in-view-what-a-burning-world-tells-us-about-climate-change-global-warming>

World Rainforest Movement. (December 2018). Villagers in Sierra Leone ponder their future after winning their lands back from a palm oil company. *WRM Bulletin 241. Voices from the ground: Communities in movement and resistance strategies*, 8-10. Retrieved from <http://www.wrm.org.uy>

Zaitchik, A. (July 2018). How conservation became colonialism. *FP*. Retrieved from <https://foreignpolicy.com/2018/07/16/how-conservation-became-colonialism-environment-indigenous-people-ecuador-mining/>

Documentaries:

Bag It (2010) and *Plastic Planet* (2009) both examine the effects of plastic on eco-systems - land and water - and the human body. Plastic is everywhere, even in our blood! <http://www.bagitmovie.com/>
<http://www.wernerboote.com/cms/wernerboote/index.php?lang=2&idcatside=85>



Consumed: Inside the Belly of the Beast (2011) is about modern consumerist culture and why people behave the way they do. <https://www.fmtv.com/watch/consumed-inside-the-belly-of-the-beast>

Dam'ned (2016) looks at how the Polavaram Dam project in India affects the lives and livelihoods of thousands of people, and asks the question: who benefits? The documentary asks why, despite increasing evidence of the destructive consequences of big dams across the world, do our governments keep pushing for these mega projects? https://www.youtube.com/watch?v=lyZX_b8RIn0

Every Bird on This Island Eats Plastic (2016) is about Midway Atoll (an island), where huge amounts of plastic land up and get into our food chain. https://www.youtube.com/watch?v=GEOt9F_V-Us

Thank You for the Rain (2017) is a collaborative film made by Kisilu Musya, a Kenyan farmer, climate fighter and video diarist, and Julia Dahr, a Norwegian filmmaker and activist. It addresses a range of issues linked to climate change. <https://thankyoufortherain.com/>

The Age of Stupid (2009) is set in the future and looks back to try to understand why humans did not address the climate crisis. <https://www.imdb.com/title/tt1300563/>

The Coconut Revolution (2001) is about the Bougainville Revolutionary Army who live on one of the Pacific islands. The army rose up in arms against the giant mining corporation Rio Tinto Zinc (RTZ). The documentary shows how people have survived and thrived despite the threat of their land being taken away for mining. <http://www.dailymotion.com/video/x2x5eul>

The Shore Break (2015) is about the struggles of the Pondo people in the Amadiba area of the Wild Coast. <http://www.theshorebreakmovie.com/>

VIDEO: Anne Petermann at the New York City Climate Convergence - 'Direct Action is the Antidote to Despair'. (19 September 2014). <https://globalclimateconvergence.org/2014/09/video-anne-petermann-nyc-climate-convergence-direct-action-antidote-despair/>

Websites (organisations/groupings/campaigns/petitions). There are many more in addition to these below:

The Alternative Information & Development Centre (AIDC) 'was formed in 1996 in response to the democratic transition in South Africa and the new opportunities and challenges it brought those seeking greater social justice within the democracy. AIDC has established itself as a leading source of research and information on themes of poverty, trade, and globalisation as well as playing a central role in various regional and international networks and forums. A merger with Amandla Publishers in 2008 has provided a communication focus for rebuilding the organisation into an effective capacity enhancing and knowledge producing organisation'. <http://aidc.org.za/>

Call it by its true name: declare Global Climate Emergency now <https://www.ipetitions.com/petition/call-it-by-its-true-name-declare-global-climate>

'By centring its work on bottom-up community-led projects and campaigns, Carbon Trade Watch (CTW) aims to provide a durable body of research which ensures that a holistic and justice-based analysis of climate change and environmental policies is not forgotten or compromised. As part of our solidarity work, CTW aims to accompany and support movements and communities in their local initiatives and struggles for environmental and social justice. Importantly, the collective gathers and translates work with others in this field to help facilitate broader co-operation and understanding'. <http://www.carbontradewatch.org/>

The Climate Justice Project (*cultivating scholar-activism to promote climate justice*) 'creates a space for academically-affiliated people to work on issues of climate justice. Together we share resources, collaborate, and engage with community-based efforts in the interest of building bridges between the university and community, and build power in the climate justice movement in both settings'. <http://www.climatejusticeproject.org/>

The Co-operative and Policy Alternative Centre (COPAC) is a not-for-profit Section 21 organisation. It aims 'to build human solidarity to sustain life and a grassroots driven, just transition for system change'. <http://copac.org.za/>

The Global Justice Ecology Project (GJEP) 'explores and exposes the intertwined root causes of social injustice, ecological destruction, and economic domination'. <https://globaljusticeecology.org/>

GRAIN 'is a small international non-profit organisation that works to support small farmers and social movements in their struggles for community-controlled and biodiversity-based food systems'. <https://www.grain.org/>

groundWork 'is a non-profit environmental justice service and developmental organisation working primarily in Southern Africa in the areas of Climate & Energy Justice, Coal, Environmental Health, Global Green and Healthy Hospitals, and Waste'. <http://www.groundwork.org.za/>

The Indigenous Environmental Network (IEN) 'is an alliance of Indigenous Peoples whose shared mission is to protect the sacredness of Earth Mother from contamination & exploitation by respecting and adhering to indigenous knowledge and natural law'. <http://www.ienearth.org/>



Are you a sky seller? Or a sky protector?

Carbon trading lets governments and corporations pretend they are doing something about global warming when they are not. Furthermore, carbon trading allows polluters to profit from global warming, the greatest threat in history to humanity's survival. <http://skyprotector.org/>

[Really] save our forests

REDD, according to the United Nations, stands for REDUCING EMISSIONS from DEFORESTATION and forest DEGRADATION. But really what REDD means is REAPING profits from EVICTIONS, land grabs DEFORESTATION and DESTRUCTION of biodiversity.

Life After Coal/Impilo Ngaphandle Kwamalahlle 'is a joint campaign by Earthlife Africa Johannesburg, groundWork, and the Centre for Environmental Rights'. Its aim is to: 'discourage the development of new coal-fired power stations and mines; reduce emissions from existing coal infrastructure and encourage a coal phase-out; and enable a just transition to sustainable energy systems for the people'. <https://lifeaftercoal.org.za/>

Local Futures 'works to renew ecological, social and spiritual well-being by promoting a systemic shift towards economic localization. A pioneer of the new economy movement, Local Futures has been raising awareness for four decades about the need to shift direction - away from dependence on global monopolies, and towards decentralized, regional economies'. <https://www.localfutures.org/>

The New Economics Foundation works to create a new economy. It works 'with people igniting change from below' and it 'fights for change at the top'. <https://neweconomics.org/>

Founded in 2003, the Post Carbon Institute's 'mission is to lead the transition to a more resilient, equitable, and sustainable world by providing individuals and communities with the resources needed to understand and respond to the interrelated ecological, economic, energy, and equity crises of the 21st century'. <https://www.postcarbon.org/>

The Post Carbon Reader

<http://www.postcarbon.org/publications/post-carbon-reader/>

The P2P Foundation (officially, The Foundation for P2P Alternatives) 'is a non-profit organization and global network dedicated to advocacy and research of commons-oriented peer to peer (P2P) dynamics in society. P2P is an abbreviation of "peer to peer", sometimes also described as "person to person" or "people to people"'. <https://p2pfoundation.net/the-p2p-foundation/about-the-p2p-foundation>

The Radical Ecological Democracy (RED) website 'is an initiative of the Indian-based Kalpavriksh Environmental Action Group, which has been in the forefront of the struggle for environmental sanity and sustainability in India for the last four decades. RED is about searching for alternatives to the unsustainable and inequitable model of 'development''. <https://www.radicalecologicaldemocracy.org/>

The South African Food Sovereignty Campaign (SAFSC) 'emerged out of a need to unite organisations, social movements, small scale farmers, farmworkers and NGOs championing food sovereignty into a national platform in advancing food sovereignty strategically in South Africa. At the Food Sovereignty Campaign Assembly (February 2015), the campaign was further developed, a programme of action agreed to and a national coordinating committee elected, representing the Solidarity Economy Movement, community organisations, agrarian, small scale farmer, environmental justice and food price sectors'. <https://www.safsc.org.za/>

The South Durban Community Environmental Alliance (SDCEA) was formed in 1995. It is a non-governmental environmental justice organisation which 'makes no profit and exists solely for the benefit of the people it represents. It is a vocal and vigilant group active in lobbying, reporting and researching industrial incidents and accidents in the area'. <https://sdcea.co.za/>

The Corner House 'aims to support democratic and community movements for environmental and social justice. It aims 'to pay constant attention to issues of social, economic and political power and practical strategy'. <http://www.thecornerhouse.org.uk/>

The GreenHouse Project (GHP) 'is an environmental NGO demonstrating sustainable living and development. The GHP runs the GreenHouse People's Environment Centre in Joubert Park, Johannesburg'. <http://greenhouse.org.za/the-greenhouse-project/>

The Next System Project 'is an initiative of The Democracy Collaborative aimed at bold thinking and action to address the systemic challenges the United States faces now and in coming decades. Deep crises of economic inequality, racial injustice and climate change - to name but three - are upon us, and systemic problems require systemic solutions'. <https://thenextsystem.org/>

WoMin 'is an African gender and extractives alliance, launched in October 2013, which works alongside national and regional movements and popular organisations of women, mining-impacted communities and peasants, and in partnership with other sympathetic organisations. WoMin works, with numerous others, to advance an African post-extractivist eco-just women-centred alternative to the dominant destructive model of development'. <https://womin.org.za/>

The World Rainforest Movement (WRM) 'is an international initiative that aims to contribute to struggles, reflections and political actions of forest-dependent peoples, indigenous, peasants and other communities in the global South. WRM is part of a global movement for social and environmental justice and respect for human and collective rights'. <https://wrm.org.uv/>

350.org 'uses online campaigns, grassroots organizing, and mass public actions to oppose new coal, oil and gas projects, take money out of the companies that are heating up the planet, and build 100% clean energy solutions that work for all'. <https://350.org/about/>

Add your own Useful Resources:

The Extinction Rebellion Declaration

During their action on October 31st in London, Extinction Rebellion sent out a press release, which read in part:

The disruption we have caused today is nothing to the destruction that is being unleashed by our leaders' criminal inaction on climate and ecological breakdown. Just yesterday a WWF report announced that humanity has wiped out 60 percent of mammals, birds, fish and reptiles since 1970, yet Philip Hammond MP entirely neglected to mention climate breakdown in his budget. Our politicians have failed us. We must take our future into our own hands.

Today we pledge, in accordance with our consciences, and with a clear duty to our children; our communities; this nation and planet; a non-violent rebellion on behalf of life itself and against our criminally negligent government. The abject failure to protect citizens and the next generations from unimaginable suffering brought about by climate breakdown and social collapse is no longer tolerable.

We will not stand idly by and allow the ongoing destruction of all that we love. Our hearts break and we rage against this madness. We have both a right and duty to rebel in the face of this tyranny of idiocy, of this planned collective suicide. Join us.

<https://truthout.org/articles/the-global-extinction-rebellion-begins/>

This professor just got arrested for making climate change graffiti

Governments aren't paying attention to scientific research, but maybe crime will get people's attention.

(Ilana Strauss, 14 January 2019)

Colin Davis, a middle-aged Bristol University psychology professor, was recently caught making graffiti drawing attention to climate change. He and seven other activists sprayed symbols and slogans on Bristol's environment agency's headquarters last weekend. Police arrested him, put him in a cell and eventually released him, which he apparently didn't mind.

<https://www.treehugger.com/climate-change/professor-just-got-arrested-making-climate-change-graffiti.html>



Images

The ecological crisis through the eyes of children. There are four drawings by children (Isabella, Okuhle and Nina) in this booklet. Our children and grandchildren are the ones who will have to deal with the ecological crisis we have created. Let us listen to them and to all children yet to walk this Earth.

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Gaia, Mother Earth, the Mother of All

Blog: Mythologian.net 2012

Artist unknown

<http://mythologian.net/gaia-mother-earth-the-mother-of-all/>

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Illustration by Rico for Nal'ibali. Reproduced with kind permission of Nal'ibali.

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Reuters

Beneath the Poverty Line: Horrific pictures of Filipino children sifting through rivers of rubbish in desperate bid to find something to sell (Kate Pickles, MailOnline, 3 July 2015)

<https://www.dailymail.co.uk/news/article-3148193/Beneath-poverty-line-Children-Philippines-risk-lives-sifting-floating-rubbish-filthy-rivers-material-sell-survive.html>

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Artists: Cani & Porci, n/d

"Don't Worry Africa, We'll Go Away When We Finish"

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Website: Remember Saro-Wiwa

Platform 2012

http://remembersarowiwa.com/?hc_location=ufi

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"System Change Not Climate Change". The Bearpit, Bristol.

Capitalism and Climate Change: The (real) Inconvenient Truth (Jack Sansum, Medium, 4 August 2017)

<https://medium.com/@jacksansum/capitalism-and-climate-the-real-inconvenient-truth-94996d469929>

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The Chipko 'tree huggers'

Source unknown

<http://vedicviews-worldnews.blogspot.com/2011/06/hindu-beliefs-in-indias-green-activism.html>

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Website: Hambach bleibt!

<https://hambachforest.org/>

All other images from Freepik and Pixabay.





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