CHURCH AND ENVIRONMENT

PMU

RESOURCE AND TOOL BOX

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Church and Environment Resource and Tool Box

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Our Responsibility in the Environmental Crisis

THE ENVIRONMENTAL CRISIS is a threat to the very stability and prosperity of our world. All over the globe, people are feeling the effect of climate change, biodiversity loss and pollution. If we do not address these issues, many people, animals, and plants will struggle to survive. It is about life or death. In Romans, chapter eight, we read that creation has been groaning as in the pains of childbirth right up to the present time. This is a powerful image of a world that is not well. And when we read the news, it is obvious that this holds true also today. We are seeing injustices, suffering and environmental destruction in every part of the world. Climate change and other environmental problems are making human suffering worse, through for instance erratic rainfall, causing both droughts and floods, record heatwaves and supercharged storms.

All of creation is feeling the effects of the environmental crisis. We are seeing natural disasters and ecological destruction in unparalleled ways. But what is the source of these problems? What can be done to contribute to a solution? Perhaps the concept of *shalom*[1] holds the key.

Shalom is often translated as 'peace' but is really much deeper than that. It is about fullness, harmony and symbiosis. The first pages of the Bible describe creation in a state of shalom. There was total harmony and perfect relationships between God, human beings, and creation. Due to sin, all of these relationships have been broken. But we are promised a future where shalom will reign again, and this is our inspiration in the midst of the global ecological crisis.

This tool box is divided in three parts. The first part is an introduction to climate change and other environmental issues from a scientific perspective. The second part deals with ecotheology and focuses on the role of the Church in caring for the environment. These first two parts try to answer the question *why* we should care about the environment. The third part is a bit more technical than the other two

1 Read more about Shalom on page 34

and deals with *how* we can engage in climate and other environmental issues. The various topics and perspectives aim to explore answers to questions such as:

- What is the state of the earth's ecosystems and what are the major environmental crises we face?
- What are some of the reasons for our environmental crisis?
- What is the relevance of an environmental perspective in development work, and how does it relate to other thematic development areas?
- How does the Bible and a faith-based approach guide us in responding to these challenges?
- What are some rights-based solutions to our environmental crisis and what is the value of a rights driven approach to environmental work?
- What exercises and tools can we use to get a deeper understanding of what we can do to create sustainable communities and societies?

We invite each reader to dig deeper into these questions together with us and to use the tool box in a way that seems relevant within his or her context. We strongly believe in the Church as an agent of change, and are happy to provide this tool, helping us all to take bold and necessary steps. The Church is called to make a difference. Let's do that together!

Niclas Lindgren
Director, PMU

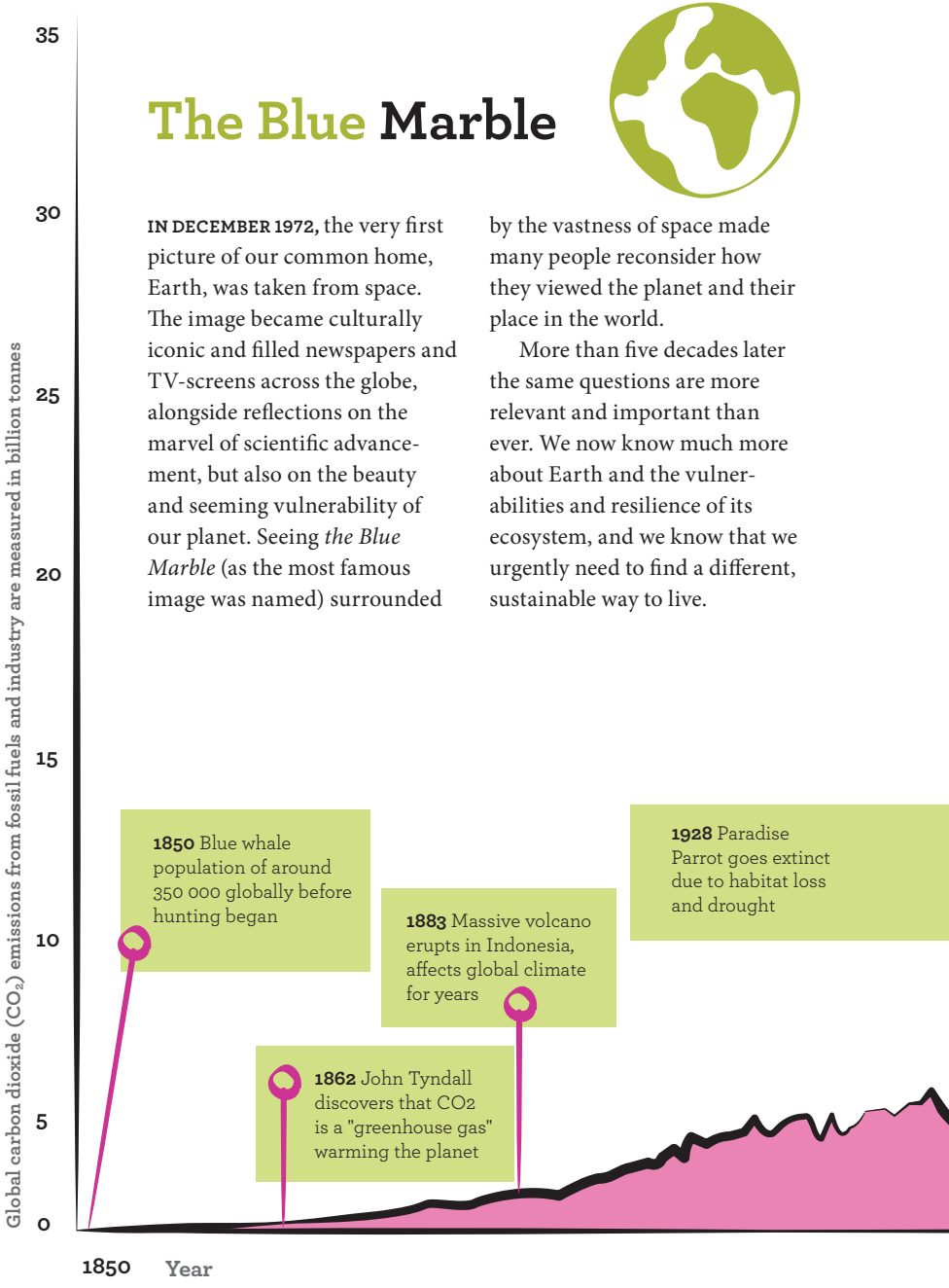
PART 1

THE STATE OF THE EARTH

The Blue Marble

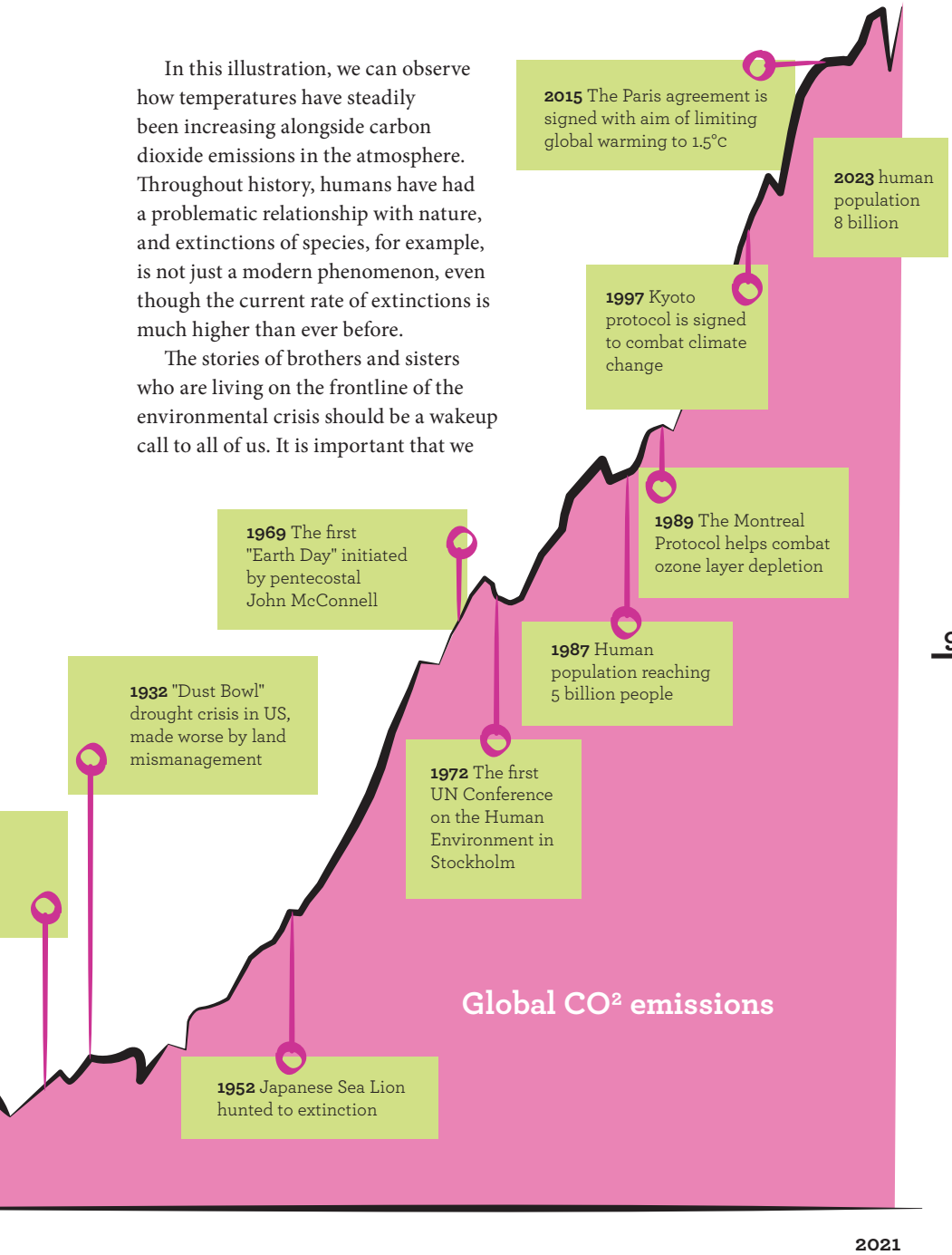
IN DECEMBER 1972, the very first picture of our common home, Earth, was taken from space. The image became culturally iconic and filled newspapers and TV-screens across the globe, alongside reflections on the marvel of scientific advancement, but also on the beauty and seeming vulnerability of our planet. Seeing *the Blue Marble* (as the most famous image was named) surrounded by the vastness of space made many people reconsider how they viewed the planet and their place in the world.

More than five decades later the same questions are more relevant and important than ever. We now know much more about Earth and the vulnerabilities and resilience of its ecosystem, and we know that we urgently need to find a different, sustainable way to live.



In this illustration, we can observe how temperatures have steadily been increasing alongside carbon dioxide emissions in the atmosphere. Throughout history, humans have had a problematic relationship with nature, and extinctions of species, for example, is not just a modern phenomenon, even though the current rate of extinctions is much higher than ever before.

The stories of brothers and sisters who are living on the frontline of the environmental crisis should be a wakeup call to all of us. It is important that we



realise that everyone has a responsibility to listen and act to protect nature. But we also need to be aware of the complex factors and systems that are at work, making Earth and its ecosystems function, and providing the foundation for our modern society. These very systems are being disrupted at a global scale. In the next chapter we will begin our learning journey by looking back.

CASE: *Floods in Pakistan and Drought at the Horn of Africa*

IN PAKISTAN, UNPRECEDENTED floods paralysed the country in 2022. One third of the country was flooded. Amir Baluch's house was washed away in the disaster. He is the father of two daughters and four sons. One of his children is suffering from epilepsy. Amir Baluch used to work for a private hotel to be able to afford the child's treatment and the family could hardly make ends meet. The hotel, in which he used to work on daily wages, was also washed away by the floods. His family was left stranded without a roof over their head and with no income. The floods were exacerbated by climate change, which increases the annual monsoon rains and melts the glaciers in the Himalayas.

All over the world, testimonies such as Amir's are demonstrating the devastating impact of the environmental crisis and a quickly deteriorating ecology. In the Horn of Africa, five consecutive rainy seasons failed between 2017 and 2022. This historic drought was 100 times more likely because of climate change according to scientists. Tens of thousands have died and many more carry horrific stories from the hardship of this situation. More than eight million farm animals have died, further increasing vulnerabilities for the future. Families who have farmed the same areas for generations now witness their lands turn from fertile ground to withering deserts, which in turn leads to widespread migrations.

**Amir's real name is protected for security reasons.*

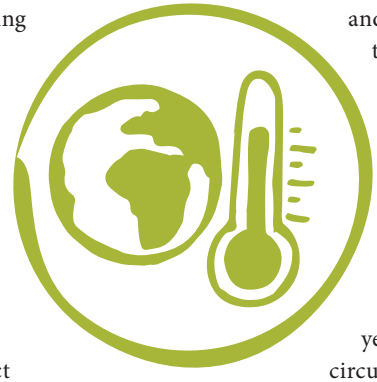
The Age of Humans

THE HISTORY OF Earth has been divided into different geological epochs or time periods. The latest period that has been officially named by geologists is the Holocene, and it started roughly 10,000 years ago. The climate of the earth has since its creation slowly varied between extreme heat, and extreme cold. However, during the Holocene, the planet's climate has been remarkably, some even say miraculously, stable. The average temperature has only gone up and down by about one degree Celsius during this time period. This has created a predictability and relative lack of extremes that our human societies are totally dependent upon. As professor Johan Rockström puts it: "The Holocene is the only equilibrium of the planet that we know for certain can support humanity as we know it".[2] Some scientists are now proposing that we have left the Holocene and entered the Anthropocene, meaning 'the age of humans', where humans are the biggest driving force of change in climate and geology.

Climate is defined as the long-term weather pattern in an area. Or as NASA puts it: "Weather is what conditions of the atmosphere are over a short period of time, and climate is how the atmosphere 'behaves' over relatively long periods of time."

The Greenhouse Effect and Global Warming

THE GLOBAL, AND local, climate is affected by a number of different factors, like the intensity of the sun's radiation, volcanic eruptions etc. But without human intervention, the earth would probably be cooling slightly right now,

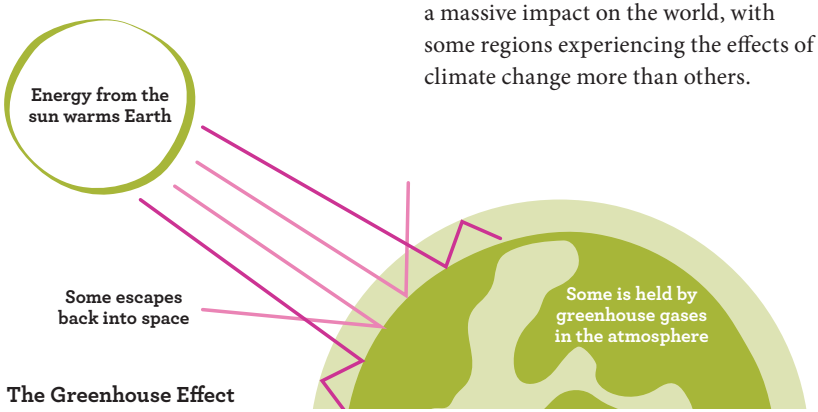


instead of rapidly heating up. How does that add up? It is down to what is commonly known as the *greenhouse effect*.

The earth is surrounded by a layer of gases: water vapor, carbon dioxide, methane and many more. These gases affect the earth's climate by 'trapping' heat as shown in the illustration below.

The principle is similar to the one at work in a greenhouse. The rays of the sun can penetrate the glass relatively unhindered, but when they are bouncing up towards the sky again, some are trapped within the greenhouse causing the temperature to increase. The same kind of logic applies when you put on clothes: the layer of fabric then traps the heat emanating from the body, making you warmer. We are essentially giving the earth a fever by burning fossil fuels and thereby thickening the blanket around the planet.

Since humans started burning fossil fuels at a large scale in the 1800s, a massive amount of carbon that had been stored for millions of years have been put into circulation again which has disturbed the natural carbon cycles. This has resulted in much higher levels of greenhouse gases such as CO_2, methane etc. in the atmosphere. The carbon cycle is one of many natural cycles that humans have interfered with, as will become clear later on in this chapter, but it is arguably the most worrying. Due to the 'atmospheric blanket' of greenhouse gases growing thicker, the world is rapidly warming up towards a temperature level that risks pushing the earth into a different climate than what we have been used to for over 10,000 years. This global warming already has a massive impact on the world, with some regions experiencing the effects of climate change more than others.



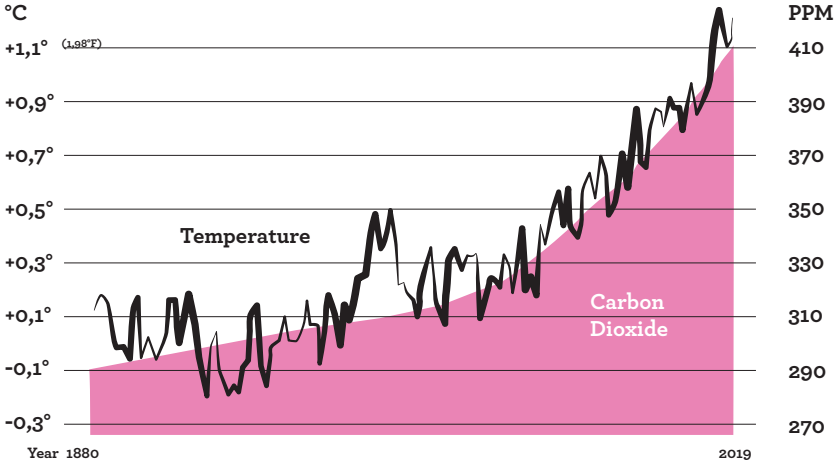
The Greenhouse Effect

The Intergovernmental Panel on Climate Change (IPCC) is the body of the UN responsible for advancing knowledge on human induced climate change. They regularly produce reports that unite or synthesise thousands of the leading scientific articles on climate change. This is an excellent source to get updated scientific insights regarding climate change, and while their whole reports are thousands of pages long, there are always more accessible summaries released as well.[3]

One of the key contributions of these reports since the turn of the century can be found within the field of *carbon budgets*. This essentially means that the IPCC authors have calculated the remaining amount of greenhouse gases humans can emit and still have a reasonable chance of staying below certain temperature thresholds. The thresholds most often discussed are 1.5 degrees Celsius or 2 degrees Celsius. Scientists say that if we reach a temperature increase of 2 degrees Celsius or more, the damage to humans and our planet will be massive, and the likelihood of the temperature spiralling upwards beyond our control will increase greatly. Another way of phrasing it is to say that the 2 degrees threshold is a potential *tipping point* for the climate. If we breach it, it might not be within our power to reverse the damages and we could be faced with a 3 or 4 degrees warmer world.[4]

The effects of climate change are being felt in all regions of the world, with already vulnerable parts of the globe being hit the hardest. We see more water extremes such as droughts and floods in almost all regions of the world, with places like East Africa, Pakistan and Bangladesh at the forefront. It is

Global Temperature and Carbon Dioxide



also harder to predict when it will rain, which disrupts farming in for example Ethiopia, Burkina Faso, India and other countries with pronounced seasonal dry and rainy seasons.

Climate scientists at the UK's Met Office found that the natural probability of a heatwave exceeding the average temperatures from 2010 would be once every 312 years. But when climate change is factored in, the risk increases to once every 3.1 years. That is why we see so many record heat waves across the globe, with temperatures as high as 50 degrees Celsius in countries like Pakistan, India and Algeria.[5]

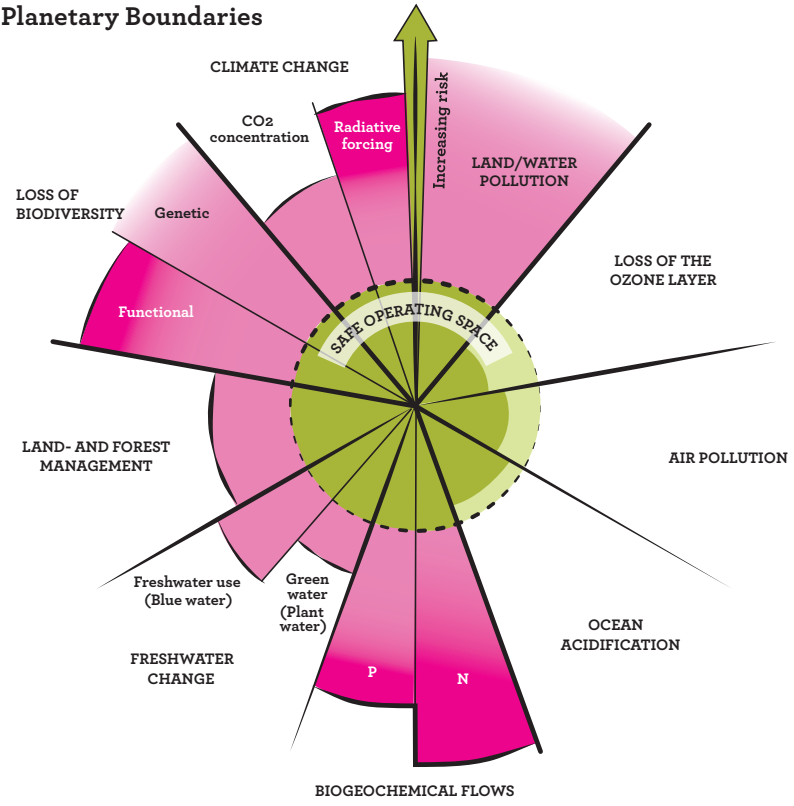
Global warming is similarly melting glaciers in the coolest regions of the world, contributing to sea level rise across the world's coastlines. The number of intense storms are also increasing, with devastating hurricanes in for example the Philippines, Mozambique and North America. Moreover, diseases are also spreading in new ways due to a changing climate. The 2021 Lancet Countdown report, published in October, highlighted a 39 percent increase in the number of months with high risk of malaria transmission in some highland areas of the world since the late 1950s. We are all feeling the effects of climate change, and every community in the world needs to prepare for and adapt to a new climate.

At the time of writing, in 2023, estimates by The Global Carbon Project (GCP) put the remaining carbon budget for staying below 1.5°C temperature increase – specifically, the amount of CO2 that can still be emitted for a 50 percent chance of staying below a 1.5°C temperature increase – at 380 billion tonnes of CO2. This may sound like a lot, but at the current rate of emissions, this budget would be blown in just nine years, in the year 2032.

The Nine Planetary Boundaries

HOWEVER CO_2 AND other greenhouse gases and the global warming they cause is only one part of the ecological crisis we are in. The fact that our planet has limited resources, and that our ecosystems are sometimes quite fragile, means that we need to be mindful of more things than only climate change. One excellent model which showcases this has been constructed by scientists from Stockholm Resilience Centre. They propose that there are nine *planetary boundaries* which, if overstepped, all could lead to our global ecology

Planetary Boundaries



going into another state and losing the ability to support human societies and thriving eco systems as we know them. Essentially, the model is about defining a "safe operating space for humanity"[6], i.e. what conditions need to be met and maintained to have the possibility to have healthy people and ecosystems?[7]

This diagram aims to colour code the planetary boundaries. Ideally, all of the boundaries would still be within the green, safe levels. Some of them have moved beyond the safe zone, and we have given those a pink colour, which means that they are entering the risk zone for how much we can push that planetary boundary and still have a safe and sustainable planet. These are warning lights to humanity.

1. **Climate change** has already been covered previously in this chapter and is perhaps the most crucial planetary boundary. Our altering of the earth's climate already has, and will continue to have, very serious consequences for people and planet. We can see its effects in the form of more extreme weather and wildfires, the melting of glaciers which affects the water supply for billions of people, as well as rising sea levels.

***Main drivers*:** The main driver of climate change is our burning of fossil fuels (oil, coal, gas) to create electricity and provide power to industries and transportation. But there are many other drivers as well, like unsustainable food production (especially red meat), bad forest management and overconsumption. Any activity that releases greenhouse gases into the atmosphere or that destroys natural *carbon sinks* (ecosystems that bind or store carbon, such as forests and wetlands), are driving climate change. Climate change is also one of the drivers behind biodiversity loss, which is the next boundary.

2. **Biodiversity loss**[8] is another especially worrying area that needs more attention. Without a rich biodiversity, whole ecosystems are at risk of collapse. Societies are always a part of ecosystems and depend on flourishing nature for our food, water, air and a host of other things. As much as 35 percent of worldwide crop production would vanish without pollinating insects. Three-quarters of our crops, such as coffee, most fruits, onions and beans, depend on pollinators to some extent. Having a rich biodiversity in the soil (fungi, insects, bacteria etc.) is also necessary for healthy and sustainable agriculture.

Main drivers: The main driver of biodiversity loss is the practice of clearing natural and old forests in order to replace them with 'monocropping' or 'monocultures' (the practice of planting only one species on large areas of

land, year after year), often palm oil, soy, corn, grains or a fast-growing tree species like eucalyptus for timber. This practice is also often connected to cattle farming, where there is need for grazing land or space to grow some of the previously mentioned crops such as soy to feed the animals. In essence, this leads to the loss of habitat and natural ecosystems.

3. **Land- and forest management** is targeting how we use our lands in general, and forests in particular. In order to maintain biodiversity, mitigate climate change and maintain healthy freshwater flows, to name just a few critical environmental issues, land and forests need to be protected or well managed. Too much land, hosting critical ecosystems, is currently converted into monocultures or human-made constructions like roads or buildings.

   Main drivers: Deforestation to make way for monocultures such as palm oil production, cattle raising or construction.

4. **Biogeochemical flows** is a boundary focused on elements like nitrogen and phosphorous and their cycle or path through ecosystems. Both nitrogen and phosphorous are important for plants to grow. Therefore, scientists have developed ways to create synthetic fertilisers, disturbing the natural balance of nutrients in the environment. When our lands and waterways are filled with too much phosphorous and nitrogen, certain species grow too fast and too much, creating problems such as toxic algae blooms and 'dead zones' in oceans and lakes. This boundary is flashing warning lights to humanity and there is a need to urgently rethink how we use, for example, fertilisers.

   Main drivers: Overuse of fertilisers, especially synthetic fertilisers, industrial emissions and deforestation.

5. **Land/water pollution** is called *novel entities* in Stockholm Resilience Centre's research, which basically means 'new things', or non-natural materials and chemicals. In essence it is about chemical pollution and refers to new materials and things that humanity is creating, such as plastic and chemical pollutions, heavy metals etc. Plastic pollution is now a major issue for ecosystems and human health. Just to mention two examples: scientists estimate that 9 out of 10 sea birds have plastic in their stomachs, causing suffering and death, and contributing to ecosystem decline.[9] Humans are also affected, and according to some estimates, people eat and drink the equivalent of a plastic bank card every week on average, through ingesting tiny plastic particles, also called micro plastics, that exist literally everywhere on the planet.[10] Micro plastics are even

found in our bloodstreams. Since this problem is relatively new, scientists are not yet sure if and, in that case how, micro plastics affect our bodies.[11] Where waste disposal is dysfunctional, other chemical pollutants often enter rivers and other bodies of water and can cause many health problems for people.

Main drivers: The production and use of non-natural materials, such as plastics and chemicals, as well as poor waste management systems and littering.

6. Air pollution[12] is a boundary related to both climate change and land/water pollution. *Aerosol* is a scientific term commonly used in this context, basically meaning air pollution or 'particles in the air'. Aerosols, or air pollution, include everything from exhaust fumes from cars, smoke from wildfires and dust from the ground that is swept up into the atmosphere and contributes to air pollution. Air pollution is a major health hazard for people all over the world. The World Health Organisation (WHO) estimates that 99 percent of people breathe air that is exceeding WHO's guideline limits and contains high levels of pollutants, with low and middle-income countries suffering from the highest exposure. Air pollution contributes to 7 million premature deaths annually.

Aerosols also have direct and indirect effects on the climate. Air pollution can disturb and change cloud formations, and in that way affect rainfall in major ways. Aerosols also serve as small 'mirrors' in the atmosphere, blocking the sun rays from reaching the surface of the earth. That means that air pollution is actually helping to lessen global warming, although at a high cost to human, animal and plant health. This highlights one of the many complexities of our environmental challenges.

Main drivers: The burning of fossil fuels is the main driver, but burning firewood, dung and biomass also causes air pollution. Bad waste management and industrial pollution are also major factors.

7. Freshwater change is a boundary focused on making sure we have balance in the world's freshwater systems. This is another boundary closely connected with climate change since water and its journey through ecosystems are heavily affected by a changing climate and warmer temperatures. We are also disturbing natural freshwater systems, like lakes, rivers and wetlands, on a massive scale all over the world through large building projects, pollution, deforestation and industrial agriculture.

If natural freshwater cycles are disturbed too much, local and global climates can be dramatically altered. Overuse of water and pollution of water are also major factors that can decrease the access to clean water. Freshwater is becoming increasingly scarce and by 2050, five billion people risk having inadequate access to water at least one month per year.[13]

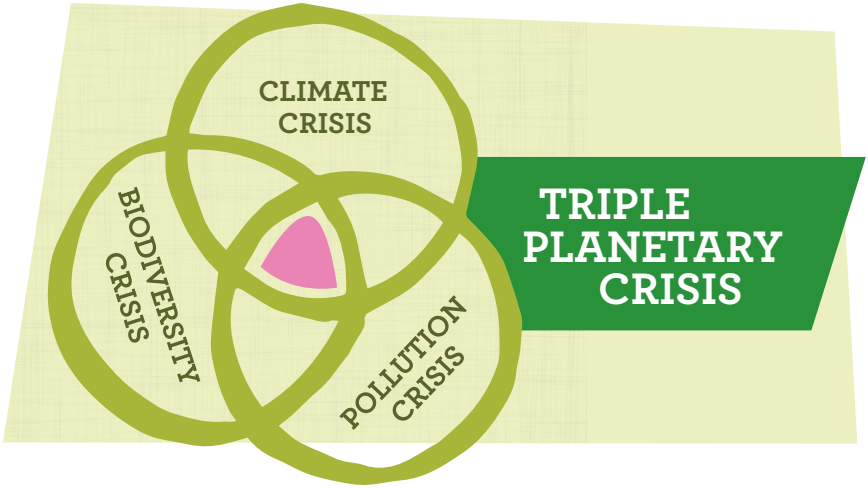
Main drivers: Unsustainable levels of freshwater use for agriculture, industry and household use, climate change and human interventions such as dams and rerouting of rivers.

8. **Ocean acidification** is yet another boundary closely intertwined with climate change. About a quarter of the carbon dioxide humans release from burning fossil fuels is ultimately dissolved in the ocean where it forms carbonic acid. This alters the PH balance of the oceans, making them more acidic, which causes huge problems for coral reefs and shellfish as they are unable to form shells in acid conditions. Since coral reefs are the 'nurseries of the seas' and vital for many fish species' survival, this impacts thousands of other marine species. In essence, this boundary is about sea life protection.

Main drivers: The burning of fossil fuels and the release of carbon dioxide into the atmosphere.

9. **Loss of the ozone layer**[14] is one of the few boundaries where we are actually moving in the right direction due to the successful *Montreal Protocol* (proposed in 1987). The ozone layer in the stratosphere filters out UV-radiation, protecting humans and animals from, for example, skin cancer.

Main drivers: The release of chemicals from things like non-organic pesticides, industries and older forms of refrigerators.



IN SUMMARY, THERE are many different environmental issues that together form the global ecological crisis. As we have seen, many of the issues are intertwined and affect each other in a way that sometimes makes it difficult to distinguish between them. Nevertheless, it is important in some contexts to be able to identify and name all these different parts of the problem. To acknowledge an issue is often the first step towards finding a way to address it. For a less technical overview, the nine planetary boundaries can also be summarised in what is often called the *triple planetary crisis* of climate change, biodiversity loss and pollution.

The very foundation of our societies is now unstable, but there are many things that we can do to shift the development of the last decades. A lot of positive work is already underway and in the coming chapters, we will discuss several ways to help turn the tide (quite literally) and bring healing, regeneration, restoration and renewal to our planet.

PART 2

ECOTHEOLOGY: A FAITH PERSPECTIVE ON THE ENVIRONMENTAL CRISIS

A Spiritual and Cultural Transformation

> *"I used to think the top environmental problems were biodiversity loss, ecosystem collapse and climate change. I thought that with thirty years of good science we could address those problems, but I was wrong. The top environmental problems are selfishness, greed and apathy – and to deal with those we need a spiritual and cultural transformation. We scientists don't know how to do that."* [15]
>
> GUSTAVE SPETH, environmental lawyer, activist and academic

THE QUOTE ABOVE by Gustave Speth arguably illustrates why the quest to address the global ecological crisis has largely failed so far. Speth has worked on environmental issues through NGOs, courtrooms and universities, and has come to this conclusion. It is true that our problems cannot be solved without scientifically advanced solutions and good policies, but the root of the problem is much deeper. It has to do with our worldviews, values and how well we can adjust our lifestyles in accordance with our values and the limitations of creation.

Faith communities therefore have an increasingly important role to play in the global effort to combat the environmental crisis. More and more people, governments and institutions around the world realise that to create societies that are truly in harmony with nature, it is necessary to address not just technical, economic and political issues, but also moral, spiritual and existential issues. Our worldview matters and it affects how we relate to God, nature, and each other.

God of Creation

GOD IS AT the centre of a Christian understanding of the world. God is the only uncreated being, and God has created everything that exists. This is an uncontroversial point among Christians. But when we read the Bible, what do we put at the centre of the biblical story? What is our starting point when we try to understand God's plans, visions and actions? A common answer to these questions is to give ourselves as human beings a central role, but many theologians argue that we understand God's plan better if we put creation as a whole in focus[16].

In the creation stories in Genesis, it is clear that all that God has created is "very good" (Gen 1:31). In various other passages we understand that God loves not only humans, but all of creation. In John 3:16 it is written: "for God so loved the world", not "for God so loved the humans". The word translated as 'world' here is 'cosmos' in the original Greek version. God loves all that he created. In Jonah 4:11 we can read about God's heart for both people and animals: "And should I not have concern for the great city of Nineveh, in which there are more than a hundred and twenty thousand people who cannot tell their right hand from their left—and also many animals?". Genesis 9:8–10 is another example of how God clearly relates to and loves all of creation: "Then God said to Noah and to his sons with him: "I now establish my covenant with you and with your descendants after you and with every living creature that was with you—the birds, the livestock and all the wild animals, all those that came out of the ark with you—every living creature on earth."

Through observing God's wonderful creation, we can learn things about God's character, and that can be a starting point for our worship. The Psalms are full of nature observations, such as in Psalm 19:1 where it says that "The heavens declare the glory of God; the skies proclaim the work of his hands." Or in Psalm 8:3-4; "When I consider your heavens, the work of your fingers, the moon and the stars, which you have set in place, what is mankind that you are mindful of them, human beings that you care for them?".

Keepers of Creation

GOD HAS ALWAYS wanted us to take care of his wonderful creation, to make it flourish. One of the first commandments that God gave us can be read in Genesis 2:15: "The LORD God took the man and put him in the Garden of Eden to work it and take care of it.". The words translated here as 'work it' and 'take care of it' (*avad*, and *shamar* in Hebrew) have rich meanings and are translated differently in different Bible translations. In the King James version, the words in this passage are translated into 'dress' and 'keep'. *Avad* is however often translated as 'serve' in other parts of the Old Testament, and *shamar* as 'protect'. Today the commandment to keep and protect creation is more important and urgent than ever.

In Genesis 1:27 we also see that: "(…) God created mankind in his own image, in the image of God he created them; male and female he created them." It is widely discussed among theologians how to exactly interpret this, but several of the interpretations hint at the same basic thing. Humans, though part of creation, are set apart. For example, some theologians emphasise unique human qualities, such as our ability to have a relationship with God, that we are self-aware and have a conscience (essence). Other theologians emphasise our unique calling in creation and the task God has given us (mission).

But how does this relate to the relationship between humans and creation? In Matthew 22, when the Pharisees question Jesus about paying taxes, Jesus replies in verses 19–21: "Show me the coin used for paying the tax." They bring him a denarius, and he asks them: "Whose image is this? And whose inscription?" "Caesar's," they reply. Then he says to them: "So give back to Caesar what is Caesar's, and to God what is God's."

Ceasar's image was on the coin, God's image is on us, and therefore we should give our lives to serve him and be his representatives, his hands and feet on Earth. Considering that God created the earth and called it 'very good' – how can we best honour that as representatives and followers of Christ? As Christians it is a fundamental and integrated part of being a disciple to take care of creation. Being earth-keepers and good stewards of creation is not an 'optional extra' for some, but something that concerns all of us.

Love Your Neighbour

OUR RESPONSIBILITY TO care for creation is also intimately linked with another core teaching of the Bible: to love one another. This message is the very fabric of the biblical ethical teaching. Jesus even commands us to "love each other as I have loved you". And biblical love for one another is of course not just about having warm feelings for one another, but to practically do good deeds. As the prophet Isaiah puts it: "Learn to do right; seek justice. Defend the oppressed. Take up the cause of the fatherless; plead the case of the widow" (Isaiah 1:17).

Historically, we have often made a distinction between caring for people and for nature, but that type of division is neither biblically nor scientifically sound. All people are wholly dependent on nature to survive. Everybody breathes air, drinks water, eats food, needs shelter from weather etc. Moreover, humans are a part of creation. By caring for creation, we are creating conditions for humans to flourish as well. It is impossible to have thriving people on a withering planet in the long term. As detailed in other parts of this tool box, our ecological crisis is also one of the very biggest threats to human health. Acting to protect and restore ecosystems, cutting greenhouse gases, or restoring water cycles is a loving action towards humans.

CASE: *Church Engagement for Resilience in Kenya*

PMU'S PARTNER ORGANISATION Free Pentecostal Fellowship in Kenya (FPFK) is working to engage the church in environmental work and resilience building. *The Resilience Livelihoods Project* engages religious leaders from both FPFK and other denominations in environmental management.

"We use a *Biblical Basis on Environmental Management Guide* to train faith leaders. The guide was developed by the project. We have trained more than 200 church leaders who include youth, women and Sunday school leaders", says project leader Grace Mugah.

Through this environmental awareness, five FPFK churches have given land to the project that is used as demonstration sites. The sites show various technologies and comparative farming practices. Tree nurseries have been established at the church grounds, agroforestry and fruit trees have been planted.

"Sunday school children keep being trained at these sites to inculcate the good practice of care for the earth", says Grace Mugah.

Through FPFK's work, several churches have also realised the significance of planting trees around the worship centres to create a calming climate.

FPFKs work demonstrates in both teaching and practical deed the holistic gospel message and that creation care is an integral part of discipleship.

Jesus and the Holy Spirit in Creation

JESUS IS NOT only a role model and teacher, nor is he only the saviour of our souls, he is so much more than that. Sometimes we forget that Jesus was also part of the creation of the world. In Colossians 1:15-17 we read that: "The Son is the image of the invisible God, the firstborn over all creation. For in him all things were created: things in heaven and on earth, visible and invisible, whether thrones or powers or rulers or authorities; all things have been created through him and for him. He is before all things, and in him all things hold together."

All things have been created through and for Jesus. We are entrusted as stewards and co-creators, but ultimately it is not our planet to use or misuse as we wish. In Psalm 24:1 this message is clear: "The earth is the Lord's, and everything in it, the world, and all who live in it." Jesus' role in relation to creation can be summarised like this. Jesus is:

- the source of creation (Col 1:15),
- the sustainer of creation (Col 1:17), and
- the saviour of creation (Col 1:20).

Therefore, following Jesus must have implications for how we relate to and care for creation.

Through Jesus, God is reclaiming His creation. "For God was pleased to have all his fullness dwell in him, and through him to reconcile to himself all things, whether things on earth or things in heaven, by making peace through his blood, shed on the cross (Col 1:19-20). In Jesus, God is putting it all together, reconciling the world to Himself and reversing the effect of sin and human poverty on the whole of God's creation (Eph 2:13-22, Luke 4:16-21). The mission of God is about life in abundance, for all of his creation. Everything has its origin in God, and the Earth and the heavens will once again be renewed through his loving intervention (Isa 11:1-19, Isa 25:6-10, Isa 66:22, Rev 21:1-4). We are invited to be a part of this divine process and bear witness about its coming fulfillment.

The Holy Spirit is just as prominently intertwined with creation. In the creation narrative in Genesis, God's *ruach* (translated into 'spirit', 'wind' or 'breath') is "hovering over the waters" (Gen 1:2).

And throughout the Bible we see the Spirit as a life giving, renewing power in creation. In Isaiah 32:15 we read about a dystopian situation which will last until: "the Spirit is poured on us from on high, and the desert becomes a fertile field, and the fertile field seems like a forest."

In Joel 2:28 there is a Bible passage often referred to by Pentecostals where God promises to: "pour out my Spirit on all people", but we must not forget that this renewal in the Spirit also begins with the land. Just a few verses earlier in Joel 2:21–22 it says: "Do not be afraid, land of Judah; be glad and rejoice. Surely the LORD has done great things! Do not be afraid, you wild animals, for the pastures in the wilderness are becoming green. The trees are bearing their fruit; the fig tree and the vine yield their riches."

In Romans 8:19–23 there is a fascinating passage where Paul is speaking about creation that groans as in the pains of childbirth and waits in eager expectation for the children of God to be revealed, hoping that it will be liberated from its bondage to decay.

All of creation, including people, are longing for redemption and salvation. To be made new and to be healed. The Holy Spirit is a working force in creation. Not just in the creation moment, but right now the Spirit is sustaining and manifesting itself in creation.

CASE: *Farming God's Way in Zimbabwe*

ASSEMBLIES OF GOD in Zimbabwe (AOGZ) are working to help rural communities in Chipinge increase yields by use of sustainable agricultural techniques developed by the organisation Foundations for Farming. One of the focus areas is maximising the yield of maize on a small plot of land through the *Pfumvudza concept*, but also on utilising a biblical narrative in trainings to motivate the project participants. The Pfumvudza concept is based on conservation agriculture, and the methodology can help grow enough maize for a family's yearly consumption from just a 39x16m plot of land.

"We are using the concept *Farming God's Way* to help project participants realise that sustainable farming techniques are quite biblical and that we can get inspiration from the Creator on how to care for creation", says the project leader Mkhululi Ngwenya.

Farming God's Way is about explaining techniques such as conservation agriculture with biblical examples. The practice of minimising soil

disturbance is exemplified by stating that "God doesn't plow", and the practice of mulching is explained as "God's blanket", covering and nurturing the soil.

"Farming God's way is an all of life approach, highlighting the need to work holistically with mindset changes and faith perspectives, alongside technical advice, to sustainably reduce vulnerabilities and poverty in the long run", says Mkhululi Ngwenya.

(Christian) Myths and Bad Arguments

EVEN THOUGH MANY Christians have realised the importance of creation care, and are including it in their discipleship journeys, sometimes we hear counterarguments regarding why we should not care. Let us look at a few of them and how we can respond.

1. Does the Bible not teach that this world will burn and that we will live in an immaterial heaven in the clouds? Why do we need to care for the earth when our eternal home is elsewhere?

Actually, many leading theologians do not believe that heaven is immaterial, or that the earth will burn and disappear completely. The Bible teaches that just like our bodies will be made new and resurrect, creation will be renewed. God cares for this creation, just like he cares for our bodily needs, so we should too. Would God really abandon his creation and simply destroy it? It is arguably a more reasonable interpretation that God will renew and restore his beloved creation, rather than abandon it and create a new one.

Other interpretations include seeing the fire in the end times as a cleansing fire, purifying the earth, but not destroying it. Yet others interpret the biblical texts to mean that the earth will indeed be destroyed and a new one takes its place. But the important question to ask is whether this really alters how we

should care for creation? No one knows when the end times will come, so in the meantime we should focus on doing all we can to glorify God and manifest his love for everything he has created. We may experience a psychological barrier to do the right thing if we believe the world is doomed to destruction, but our mission and calling is clear – to care for and protect creation, spread the gospel and love both people and the planet.

2. We should only focus on evangelism and saving souls. Or at least only focus on people!

The Bible brings a holistic message of salvation and redemption for all of creation. As we read in Romans 8, all of creation is longing for its liberation, just like people do. When people argue that we should only focus on evangelism and deprioritise everything else, they assume that this is the best way to have people respond to the gospel. But we see in the Bible that Jesus and the disciples cared deeply for the bodily and psychological needs of people, not only their spiritual needs. And there is research to suggest that churches who are committed to improving people's lives in a holistic way grow faster.[17] As highlighted in other parts of this tool box, it is also impossible in our day and age to separate social and ecological issues, we cannot have thriving people on a withering planet.

3. Why should I do something when that person/country is so much worse?

It is true that the environmental crisis is a justice issue, and the people most responsible should take the most responsibility to solve the issues. But as Christians we must always strive to do what is right, regardless of what other people are doing. It will never be right for me to steal my neighbour's hammer, just because a lot of other people around the world steal cars and jewellery. We can all make a difference, in our local area and possibly with even greater reach. We never know how God might use our actions. The young climate activist Greta Thunberg is a good example of this. She started to protest against the slow pace of the sustainable transition by sitting down outside the Swedish parliament every Friday, not expecting much of a response, but ended up as an icon for the environmental movement, inspiring youths all over the world to arrange climate marches.

Ecumenicalism and Working with Everyone

CARING FOR CREATION can be a unifying experience. Virtually all religions and faith traditions in the world emphasise people's responsibilities to care for the earth, our common home. When we are working towards a sustainable transition, towards creation justice and thriving people on a thriving planet, we should search for and embrace opportunities to join hands with people of all faiths and backgrounds. Given the fact that creation care is embedded in most faith traditions, it can also serve as a connector in otherwise difficult situations and community relationships. It can be helpful in certain situations to try and find a language which is inclusive and that followers of many faiths can gather around[18].

CASE: *Ethiopia Church Forests*

THE CHURCH FORESTS of Ethiopia are unique and sacred ecosystems found throughout the country. These small, isolated pockets of forest are traditionally protected by Ethiopian Orthodox Tewahedo Christian communities. They serve as religious sites and natural reservoirs of biodiversity.

Within these church forests, ancient trees and lush vegetation provide sanctuaries for a wide range of plant and animal species. They also play crucial roles in local water cycles and act as refuge against deforestation and land degradation.

The Church Forests of Ethiopia exemplify the harmonious relationship between religion and conservation, offering valuable lessons on the preservation of natural heritage and cultural practices.[19]

PART 3

TOOLS, TECHNIQUES AND BEST PRACTICE

The 'Silo' Challenge – Keeping the Whole Together

EVERYTHING IS CONNECTED. In real life and everyday practice this seems obvious, but through formal education and academic training we are taught to divide the real world into different fields and disciplines such as economics, geography, biology and philosophy. This is a problem which also affects international development work.

The design of funding has a tendency to deepen the focus on separate parts instead of addressing the big picture. Funds may for instance be earmarked for children's education, thereby excluding other related issues which are necessary to succeed in children's education such as infrastructure, adult education, parents' livelihood, and access to water and sanitation. Simply put, we miss the forest because we are focusing on the individual trees.

In order to realise the whole SDG agenda and achieve all the 17 integrated goals there is a need for critical changes in the way we think, make decisions, and act. We need to keep the whole together.

In the following pages, we will go through a number of other relevant concepts which can be useful to explain how things relate to each other in a certain context. These are *shalom, holism, sustainability* and *cultural views in the local context.*

SHALOM

The first pages of the Bible describe creation in a state of *shalom*. Rev. Dr. Al Tizon, author of the book *Whole & Reconciled*, defines this term as "God's very best for me, for others, for all, and for creation".[20] This means that to live in a state of shalom is to live in harmonic and prosperous relationships with God, with other humans, with ourselves and with the environment. From this perspective, to build environmentally sustainable societies, we need to build a world that is characterised by harmonic and prosperous relationships on all levels and in all directions.

When shalom is used in an international development context, it means a whole life or wholly living.[21] In other words, shalom refers to something that is complex with lots of pieces which come together to a state of completeness.

The vision of shalom inspires us to be stewards of God's creation. Shalom has

its basis in a 'theology of hope'. The hope is that:

- the world can and will be transformed and renewed,
- life can and will be changed,
- newness can and will come, and
- humans have a role to play in this transformation and renewal.[22]

In this book, we explore what restored relationships between humans, God and creation might look like and the difference they can make for our common home, the earth. We look at how shalom and many other concepts can be used as an entry point to integrate the perspectives of environment and climate change in interventions. As part of the fast-growing global Pentecostal movement, we believe that we have a responsibility to shoulder, and that this responsibility relates to the full meaning of shalom, not only some parts of it.

Questions to reflect upon:

- What does it mean to restore relationships?
- What does a restored relation to creation look like in practice?

HOLISM

Defining holism

- The interconnectivity and interdependence of all things, i.e. that all things are connected and depend on other things to function properly.
- Holism represents a perspective and world view that places emphasis on the whole system. In a holistic approach, the whole has priority over its parts. Holism helps us understand the parts in relation to one another in the context of the whole.[23]

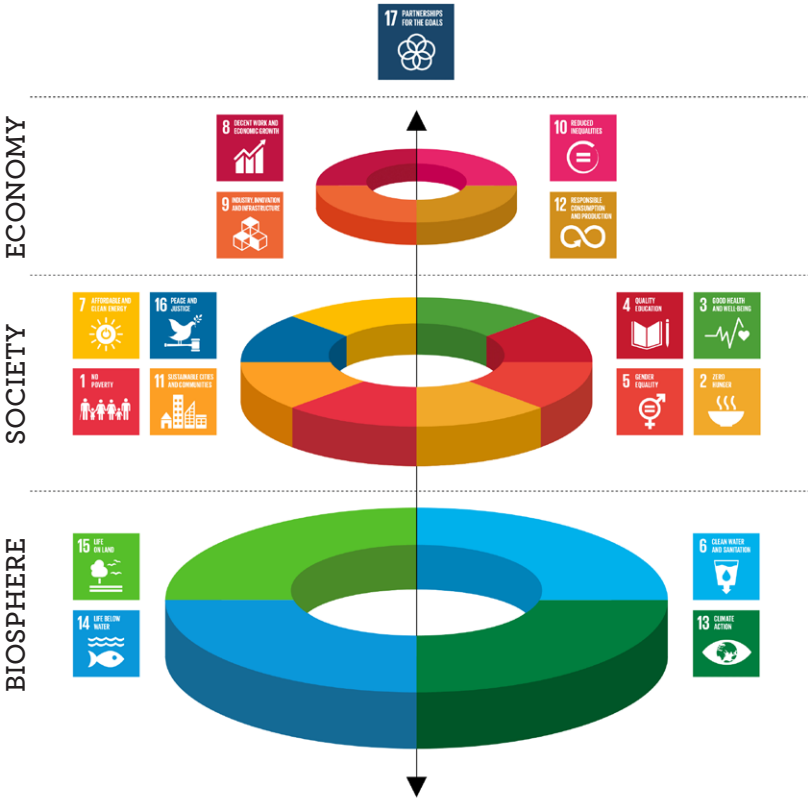
One of the best examples to illustrate holism is the human body. All the body parts and organs work together as a whole. The parts cannot function on their own and the body cannot function properly if one part is removed.

SUSTAINABILITY

The Sustainable Development Goals (SDGs) have been designed in a way that highlights the interdependence of all the goals. That means that they require implementation across different sectors with a hope of delivering holistic, sustainable development.

The interconnected nature of the SDGs requires a deep reflection of how development interventions are designed and implemented. The SDGs are so interconnected that the success of each

goal is essential to ensure the delivery of other goals. The figure below shows the interactions among the SDGs. The biosphere (nature) is the bedrock of our societies and economies.



This figure[24] illustrates the intertwined nature of social-ecological systems, and, by extension, the SDGs that are designed to effect progress within these systems. Actions on the SDGs are best informed by a systemic view and thus better delivered in partnerships that bring a broader perspective to point solutions. As Folcke, et al (2016) argue, "The focus is shifting from the environment as externality to the biosphere as precondition for social justice, economic development, and sustainability."

CULTURAL VIEWS IN LOCAL CONTEXTS

When working on integrating environment and climate perspectives in development programming it is very important to know the local context and culture. All societies have their own knowledge and understanding of relationships and connections between humans and the environment. There are also myths and traditional believes that need to be considered. A deepened understanding of these matters can help development interventions become more effective.

Questions to reflect upon:

- What are the implications of holism for development programming? What does holism mean for context analysis, problem analysis, risk analysis etc.?
- What words or ideas exist in your local context that describe the relationships between humans and nature? What does it mean to you?

The Importance of an Intersectional Perspective

INTERSECTIONALITY HELPS US to look into how different systems of discrimination (for example gender, ethnicity, religion, disability, sexual orientation or age) are linked and work together, for example there is a difference between being a young girl and an old woman or between a man living in wealth and a man living in poverty.

By applying an intersectional perspective, it is also possible to understand how people are affected by situations differently. Using the same example as above; there is not only a difference between a man living in poverty and a man living in wealth, but if these men are living in a context with natural disasters caused by climate change, their privilege and disadvantage will become more visible. A rich man will have better possibilities than the poorer man to move somewhere safe. If we also add another dimension, imagine that the poorer man also belongs to an ethnic minority that is oppressed by the authorities and the majority group in society. That fact will also affect his possibilities to influence his own situation.

GENDER AND ENVIRONMENT

Gender and environment are intertwined. To tackle climate change and reach a sustainable development that covers all humankind, a gender perspective is crucial. Gender norms, together with other cultural and social norms affect how we behave and how we are expected to behave. Our way of living in relation to climate change and other environmental issues is no exception. Women, in general tend to be more willing than men to change their behaviour to become more environmentally friendly. Masculinity norms also legitimise a lifestyle that builds on high emissions of carbon. Examples could be the stereotype idea that a 'real man' eats meat every day and drives a big car[25]. In this section, a few examples will follow of the gender dimensions of climate change. There is a great need to apply a gender perspective in both analysis and action to limit climate change and to adapt to a new climate[26].

Because of gender inequalities and gender stereotypes, climate change also impacts women and men, girls and boys differently. Women and girls suffer to

a larger extent from both direct and indirect consequences of climate change compared to men and boys. Direct effects of climate change, such as natural disasters, often have a higher number of female victims compared to male victims. The same applies to indirect effects such as lack of food, violent conflicts or migration. When climate change leads to forced migration, women and girls are also more exposed to sexual and gender-based violence. UN estimates that 80 percent of people displaced by climate change are women.[27]

Agriculture is an area where a changed climate has a big impact. More unpredictable rains, temperatures, new and invasive species are just some of the factors complicating farming due to the ecological crisis. Small-scale farming accounts for 80 percent of the food production. In many countries in the global south, the majority of small-scale farmers are women[28]. At the same time women also have the main responsibility for feeding their families. This means that when extreme weather destroys crops and diminishes harvests, women are particularly exposed. Due to unequal economic rights, women do not often own the land they cultivate and are in that sense in an even more vulnerable situation.

The access to clean water is another area that is, and will be, affected by climate change and the extreme weather that comes with it. Collecting water for the household needs is a task that is often assigned to women and girls, often forcing them to walk long distances. It is not unusual that they need to spend between three and six hours every day just collecting water. Women and girls who menstruate are also extra vulnerable to lack of clean water. Lack of access to clean water often causes girls who menstruate to miss school several days every month. The lack of clean water is also a huge problem in relation to childbirth. More than 800,000 women lose their lives every year due to insufficient access to safe water, sanitation and hygiene.[29]

YOUTH AND ENVIRONMENT

We have already mentioned the young activist Greta Thunberg above. Together with many other young people, she started a global movement urging the world to start listening to the scientists and acting accordingly. Another example is Rahmina Paulette who is raising awareness about the environmental degradation in Lake Victoria through the campaign *Let Lake Victoria Breathe Again*. The campaign highlights that large parts of the lake are suffering from severe pollution. Paulette has also founded a project that uses the invasive water hyacinth to make a wide range of products like tables, chairs, baskets and table mats.[30]

Other examples include the groups of youth in numerous countries taking action by suing their governments for failing to act to protect their future. One group from Portugal is taking 32 European countries to court over the climate change-fuelled wildfires in Portugal between 2017 and 2023.[31]

CASE: *Gender Equality and Environment in Burkina Faso*

FOR WELL OVER a decade, Alliance Missionnaire Internationale (AMI-B) in Burkina Faso have worked with groups of primarily women, but also men, in projects focused on literacy, organisation and challenging limiting gender norms and stereotypes. After successfully working with these issues for a couple of years, the participants, many of them working with agriculture, asked to learn more about how to manage the land in a more successful and sustainable way.

Jacob Badolo, Program Manager at AMI-B explains that traditionally, women are not allowed to own land in Burkina Faso, but since the participants were already organised in groups through the literacy centres, it was possible to ask for land to collectively farm and reforest.

"The members of the groups received training on the collection and production of seedlings in the nursery. On their return, some women began to make family nurseries with Moringa and Baobab trees, the leaves of which could be used to improve the family cooking", says Jacob Badolo.

When women were empowered to produce, plant and manage trees, this resulted in healthier families: "When women's incomes are improved thanks to forest products, their families benefit, and they also become aware of their interest in protecting the environment by adopting means of cooking with low energy consumption (solar cooker, butane gas, improved stoves, etc.). This will in turn lead men to give them land for environmental activities", says Jacob Badolo.

This programme is a good example of how we often need to work on several issues in combination. Here, an initiative for more efficient and sustainable farming with tree planting also became an entry point to challenge and change unequal gender roles. It also clearly demonstrates the importance of including everyone in the transition to more sustainable and healthy communities.

Another group succeeded with their lawsuit against the Dutch government, with a court rendering the government's climate action progress illegally slow.[32]

The list of good examples is long, and this is both inspiring and sad at the same time. Many youths are experiencing climate related anxiety, and study after study reveal that young people are increasingly pessimistic about the future. This feeling is easy to understand, given the reality of the ecological crisis and the many other factors that are on a negative pathway at this moment in time. It is admirable and great in many ways that so many young people are raising their voice to work and advocate for a better world. But often, this work is also a heavy burden that should not be placed on youth and children alone. Many young people voice how they are feeling betrayed and ignored by the adult world. They are excluded from decision forums and forced to watch or protest from the sidelines when decisions are taken that determine the conditions of their future.

ENVIRONMENT, CLIMATE AND CONFLICT

There is also a need to discuss climate change in the light of conflicts. Climate change does not cause violent conflict in and of itself. However, the effects of climate change, such as irregular and unpredictable rains, more extreme storms and heatwaves as well as the resulting drought and flooding can work as a threat multiplier that triggers a violent conflict or makes it more severe. The UN Environmental Programme (UNEP) estimates that at least 40 percent of all intrastate conflicts in the past 60 years have had a direct link to natural resources.

As the climate changes and alters temperatures and weather conditions all over the globe, resources like water and food will become even more scarce than they already are in the most affected areas. This will likely lead to forced migration, which in turn may lead to crowded cities and intensified livelihood challenges in certain areas. There is a great risk that all these effects of climate change will increase societal tensions and multiply already existing threats. The risks are contextual, determined by the interaction of several factors, including the actual changes in weather conditions, the extent to which a society is exposed to these changes, and most importantly, the capacity of each society to cope with the new situation and the problems that may arise from it. In other words, if two countries are exposed to the same kind of climate-related disaster, for example a severe flooding, the consequences are likely to be much worse in a country that does not have a well-functioning system to deal with disaster. A state that has enough resources, a functioning infrastructure and other supporting systems will be much better equipped to provide affected citizens with food, shelter and other basic needs in a crisis, and to respond to societal tensions resulting from the situation. Unfortunately, 70 percent of the countries that are most vulnerable to climate change today are also among

the most fragile countries in the world. The implications of these numbers are clear: when a disaster strikes, it is more likely to strike against those who have very limited capacity to deal with its consequences.

From another point of view, we can also see that conflicts often severely harm the environment in different ways. Military forces have a big ecological footprint, contributing to large carbon emissions through their activities. Also, war and the use of weapons may lead to pollution, land contamination, the destruction of forests, the plundering of natural resources as well as the collapse of management systems.

CASE: *Environment and Peace Work in Ethiopia*

EVANGELICAL CHURCHES FELLOWSHIP of Ethiopia (ECFE) has experiences of doing environmental work in challenging circumstances. Their project *Community Forests* coincided both with the Covid-19 outbreak and the civil war affecting the Tigray region of Ethiopia, which highlighted the interconnectedness between peace and environment.

"War and conflicts affect the environment in very severe ways. In a conflict zone, it is not safe to look after newly planted trees or doing any sort of maintenance or follow ups. The area that is reforested can easily be damaged by the fighting, and environmental work becomes less of a priority in a conflict situation", says Tadele Mamo G. Mariam, project leader in ECFE.

But this is far from the only way that conflict affects the environment in a negative way. War is inherently bad for the environment, with pollution, massive greenhouse gas emissions and disturbance of natural ecosystems being just some of the effects.

"It is common that fighting groups take refuge in dense old-growth forests rich in biodiversity. Sometimes the government then chooses to burn down the forest to drive them out. This of course leads to very severe environmental degradation", says Tadele Mamo G. Mariam.

Despite these challenges, ECFE has achieved impressive results, planting 249 000 trees on church and communal land. They have also made use of radio and community meetings to inform communities of the need to care for creation.

Environment as a Part of Human Rights

DURING THE LAST quarter of 2021, The Human Rights Council of the United Nations recognised, for the first time, that having a clean, healthy, and sustainable environment is a human right. In the resolution 48/13, the Council called on states around the world to work together, and with other partners, to implement this newly recognised right. The resolution reaffirms its position and perspective that all human rights are universal, indivisible, interdependent and interrelated.

When working with a rights-based approach, it is beneficial to be aware of and relate to important global agreements and frameworks such as the human right to a clean, healthy and sustainable environment and the sustainable development goals.

Other landmark agreements that are framing and shaping sustainable development include the *Paris Agreement* from 2015, wherein virtually all nations agreed to halt and limit global warming to "well below 2 degrees". The national plans to achieve this are called Nationally determined contributions (NDCs).

The *Sendai Framework for Disaster Risk Reduction* is a framework aiming to reduce the risk of and severity of disasters around the world. In order to learn more about this work and be able to contribute to national plans it can be helpful to link up with networks and organisations like Global Network of Civil Society Organisations for Disaster Reduction (GNDR).

The *Global Biodiversity Framework* is the equivalent of the *Paris Agreement* but with a focus on halting biodiversity loss and ecosystem collapse.

The holistic nature of human rights should be central in all development-programming. This is a great opportunity for holistic thinking. It means thinking about how different thematic priority areas are connected to each other. More in-depth resources on HRBA programming and good practices can be found in SMC's Learning and Resource Centre.[33]

Why adopt a Human Rights-based approach to environment and climate change programming

Seven principal advantages of adopting a human rights-based approach include:

1. Human rights and sustainable development reinforce each other. Access to environmental protection is essential to the realisation of basic human rights, including the rights to food, health and even life itself. A human rights framework that ensures transparency and empowers citizens to contribute to the management of natural resources will help to achieve environmental goals.

2. It can be used as a framework for addressing conflicting rights and interests. A human rights-based approach establishes processes and mechanisms to bring conflicting interest and rights into the open so that they can be addressed.

3. It makes programmes more effective and sustainable. Programmes are more likely to meet local preferences and needs, use local knowledge and technology, and match local capabilities to sustain the projects when beneficiaries/right holders are actively involved.

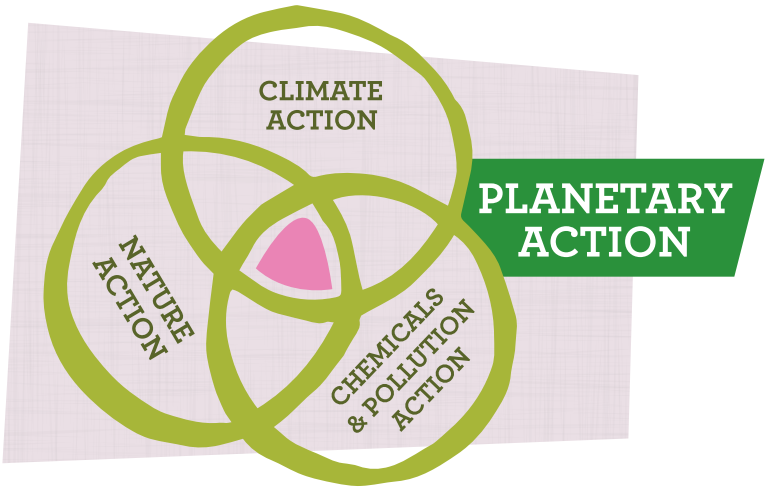
4. It fosters a more integrated approach. Analysing environment and natural resource use issues through the human rights lens allows for a better understanding of how laws, social norms, traditional practices, and institutional actions positively or negatively affect these issues. This leads to more focused strategic interventions, which address the structural causes behind environment-related problems.

5. It turns attention towards the marginalised. Groups in vulnerable situations in the project context often suffer more from environmental degradation and unjust access to natural resources such as water or land. A human right based approach ensures that such inequalities are highlighted in the programme design.

6. It prevents 'elite capture' of programmes. With its emphasis on broad-based participation and programming that builds the capacity of marginalised groups to claim and exercise their rights, a human right based approach prevents elites from capturing both the benefits and process of programming where environmental issues are at stake.

7. It enhances results-oriented management. Human rights principles and standards helps to clarify and achieve goals while contributing directly to feedback and monitoring systems. A programme based on human rights design is more likely to provide early warning of problems and strengthen the accountability of all actors as well as promote sustainability.

SOURCE: Sida 2015. HRBA, Environment and Climate Change



Structural Changes – Creation Justice

"SYSTEM CHANGE NOT climate change" is a classic rallying cry on climate marches all around the world. Evidently the current system, the status quo, is far from sustainable. This is highlighted by the *Overshoot study*, according to which we would need 1.8 planets if we would continue to live in the same way as we do today. If everyone lived like Swedes or Americans, we would need more than four planets. This is one of countless examples that highlights the vast environmental inequality in the world. Wealthy, industrialised countries are fuelling the climate crisis, and those contributing the least suffer the most severe consequences.

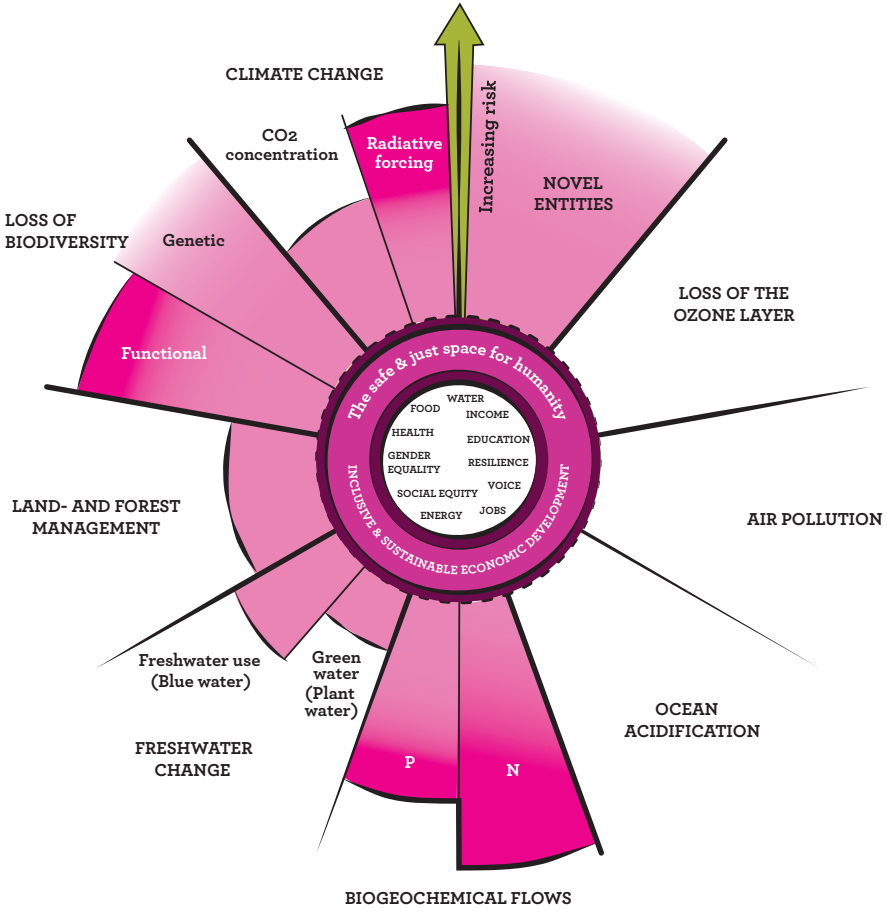
The renowned economist Kate Raworth argues that regardless of country, we are struggling with the same thing: maximising well-being within the planetary boundaries. Some countries have a good social foundation, but all these countries exceed the planetary boundaries. Other countries are within the planetary boundaries, but none of them have raised their populations above the threshold for social well-being. In that sense, all countries are 'developing countries', since not a single nation has solved the puzzle of social well-being within the means of the planet.

DOUGHNUT ECONOMICS

To illustrate this problem, Raworth has developed an innovative economic framework, *Doughnut economics,* that offers a fresh perspective on how we can reshape our economic systems to create a more just and sustainable world. The aim with this doughnut shaped model is to merge human health and ecosystem health into one model.

In essence, Doughnut economics envisions an economic model that functions 'within the doughnut'. The inner circle of the doughnut represents the minimum social and environmental standards required to ensure a good quality of life for everyone. These standards are inspired by the SDGs and include access to clean water, food, education, healthcare, and more. The outer circle represents the ecological boundaries of our planet, encompassing limits on climate change, loss of biodiversity, land use and other critical environmental

factors. As you might notice, these are the same planetary boundaries that we have already explored in part I of this book. This model integrates, in a holistic way, both social and ecological aspects for a truly sustainable development paradigm.



The key idea of Doughnut economics is to find the safe and just space between these inner and outer boundaries. In this space, we meet the needs of all people within the means of the planet, avoiding both social deprivation and environmental degradation.

To achieve this balance, Doughnut economics challenges some conventional economic thinking. Raworth says that regions with widespread poverty certainly need economic growth, but that it is a mistake to centre our economic model around eternal, exponential economic growth on a planet full of natural limits and finite resources. It shifts our focus from never-ending GDP growth to holistic well-being and sustainability, from growing to thriving. Here are a few key principles:

1. **Prioritising well-being:** Instead of solely measuring progress by economic output, Doughnut economics emphasises indicators like health, education, income distribution and social equity.

2. **Respecting planetary boundaries:** The framework acknowledges the finite nature of the earth's resources and the importance of staying within its ecological limits. This means reducing our carbon footprint, conserving biodiversity, and practicing sustainable resource management.

3. **Regenerative design:** Doughnut economics promotes economic activities such as circular economies, renewable energy and sustainable agriculture, which replenish resources rather than deplete them.

4. **Empowering local communities:** Local participation and decision-making are central to the model, ensuring that development projects align with the needs and aspirations of communities.

Raworth summarises the vision like this: "In essence, the aim of the doughnut is to meet the needs of all people within the means of the planet and I see this as humanity's 21st century challenge. It's the direction of progress that we need to make this century"[34].

Several major cities, companies and NGOs in the world have adopted the doughnut model, such as Amsterdam in the Netherlands and Philadelphia in the US. When doing so, they are posing one fundamental question that is just as applicable at community, national and global level: "How can our city be a home to thriving people, in a thriving place, while respecting the wellbeing of all people and the health of the whole planet?".[35] This is relevant for communities and regions living above the planetary boundaries and using too much of the earth's resources, but it is also a question that should guide development everywhere. Dr. Andrew

Fanning argues that "We see there's benefit for all countries in becoming regenerative and distributive by design, with each country taking its own route towards meeting the needs of its residents within the means of the living planet".[36]

It is also a tool that can be used in an advocacy setting, in order to put pressure on those responsible for most of the pollution and greenhouse gas emissions. In what way could they change, to contribute to thriving people, near and far, within planetary boundaries?

If you are interested in learning more about doughnut economics, you will find tools, links and slideshows to delve deeper into the subject on the website www.doughnuteconomics.org.

CIRCULAR ECONOMY

The circular economy is another sustainable economic model focused on minimising waste and maximising the use of resources by promoting practices such as recycling, reusing, and refurbishing products and materials, rather than the traditional 'take-make-dispose' linear model. It aims to create a closed-loop system where products and materials are kept in circulation for as long as possible, reducing environmental impact and promoting resource efficiency.

Improving Local (and Global) Environmental Conditions

THERE ARE THREE levels of climate action that are usually discussed within the UN-system: Mitigation, Adaptation and Loss and damage (compensation). In this chapter we will look closer at these levels of action.

MITIGATION

Mitigation relates to minimising or avoiding damage. When it comes to climate change, this means stopping greenhouse gas emissions, boosting carbon sinks or storages and even capturing and storing carbon. The latter is often called 'carbon capture and storage' or CCS, but this has not been done at scale anywhere at the time of writing. The goal of the mitigation efforts is to limit global warming to beneath 1.5 degrees Celsius. As of writing this, global warming is between 1.1 and 1.2 degrees Celsius. The Global North has cumulatively emitted the vast majority of greenhouse gases.

The simplest ground rule to mitigating climate change is to limit the amount of carbon-based fuels we burn, especially fossil fuels like coal, oil and gas, but also trees, peat etc. Instead, we need to move to renewable energy sources and decrease the global demand of energy. Another part of mitigating climate change is about restoring and accelerating the natural ways of trapping carbon, like planting trees and rejuvenating/not disturbing soil. We need to make use of more effective farming methods of growing food, alter what we eat and change how we travel, live and spend our money. Due to the massive imbalance and injustice in terms of greenhouse gas emissions globally, the mitigation burden should fall most heavily on the rich part of the world. With that said, every country must do their part in order to create sustainable societies that are not dependent on fossil fuels and other environmentally degrading practices.

ADAPTATION

Adaptation is about readjusting our lives and societies to a new climate and a new ecological reality. We need to evolve our communities and adapt to a new normal. The UN Framework Convention on Climate Change (UNFCCC) puts it like this:

"Adaptation refers to adjustments in ecological, social, or economic systems in response to actual or expected climatic changes and their effects or impacts. It refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change. In simple terms, countries and communities need to develop adaptation solution and implement action to respond to the impacts of climate change that are already happening, as well as prepare for future impacts."[37]

According to the International Panel on Climate Change (IPCC), humans have significantly changed 70 percent of the earth's land area and 66 percent of marine environments. Some of the changes and damage that we, humans, have done to the planet will still be here for the foreseeable future. Even if all greenhouse gas emissions were to stop tomorrow, there would still be some additional warming since the earth system is slow to change. This means that we have to adapt.

We need to adapt to new *hydrological* (water) realities. In some areas there will be less precipitation and more drought, in some areas there will be more precipitation and more floods, and in a lot of places we will see more of both. Drought often makes flooding even worse, since the ground becomes dry, hard and unable to soak up water and channel precipitation.

The sea level is rising, for example due to glaciers melting. Adapting to this can mean building walls to stop flooding from rivers, lakes and oceans. In an area where floods will likely occur more often, one way of adapting could be to choose to rear ducks instead of chickens, since the ducks can swim in case of a severe flooding. Adapting could also mean creating better systems of harvesting or collecting water, like trenches and dams, or barrels collecting runoff from roofs. Or it could mean altering which materials are used in construction, such as using 'green roofs', i.e. roofs covered with plants that can hold moisture and regulate excessive water flows. Planting trees and restoring forests can even help attract more rain and regulate floods and droughts. Restoring wetlands and mangrove forests are also key when it comes to adapting to more extreme water conditions.

We need to adapt to new temperature extremes as well. The global average temperature has only increased a little more than 1 degree Celsius on average, but this translates to much more severe heat waves. There have been countless new heat records set in the last decade, often going several degrees beyond what has previously been seen. This affects human health directly, but also indirectly through agricultural difficulties and disruptions to ecosystems. Thankfully, many of the adaptation efforts mentioned to regulate more extreme water conditions, also help tackle extreme heat. Forests and urban green areas have lower temperatures compared to non-green areas[38]. This means that simply planting rows of trees in cities can lower the temperature at

ground level significantly due to the shade they provide, and the cooling effect of moisture evaporating from the leaves.

LOSS AND DAMAGE

Loss and damage is a term used by the UN to refer to the impacts and costs associated with climate change that go beyond adaptation and mitigation efforts. It encompasses the irreversible losses and damages, such as the destruction caused by extreme weather events or the loss of livelihoods due to climate change, for which there is no practical way to fully recover. The concept recognises that climate change can result in significant harm and acknowledges the need for support and mechanisms to address these impacts, especially in vulnerable and developing countries.

Resilience

RESILIENCE THINKING HELPS to alleviate the possible consequences of things that may go wrong and affect lives and livelihoods. It helps to better respond and adapt to challenges ahead. It also helps us to embrace transformative opportunities when we anticipate threats. In the context of environmental issues, resilience thinking is something that every community around the world needs to start adapting to, because nature is rapidly changing, and we need to think ahead to be able to deal with those changes. If we do it right, we might even be able to fall forward and bounce back better.

How should we define resilience? The Swedish Mission Council (SMC) has developed a material on Resilience thinking. They propose that we all make our own definition, but suggest three key concepts that are good to include:

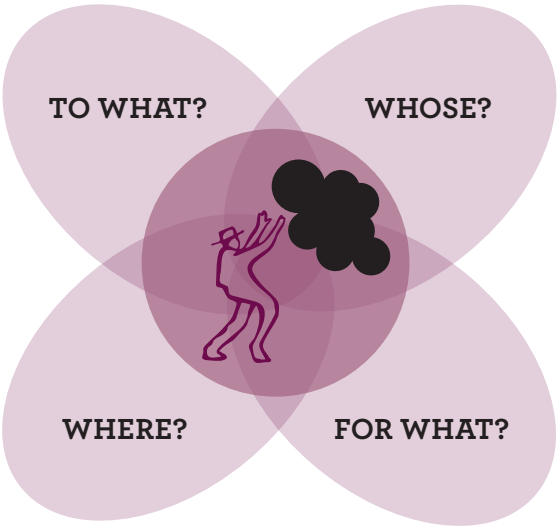
1. **Shocks and stressors**
   Resilience involves dealing with shocks or stressors or anticipating them when they are still threats. Shocks are things that happen suddenly, like a storm or an earthquake, whilst stressors are things that are slowly shifting and deteriorating. When stressors are allowed to go on for long, they can easily turn into shocks. Climate change has for instance been a stressor for many decades now, and we are increasingly seeing shocks as a result, like more extreme weather events.

2. **Capacities and power**
   We need to develop the capacities, or the abilities, to absorb, adapt and transform shocks and stressors. We will come back to this later.
3. **Rights**
   If we embrace a rights-based perspective, resilience is best seen as the right to be safe despite shocks and stressors. It is also an essential step towards achieving other rights. A clear connection can also be made to the fundamental human right to a clean, healthy and sustainable environment that was mentioned above.

THINKING AHEAD

In order to build resilience, we need to practice thinking ahead and anticipating threats before they occur. When planning a development programme, it can be helpful to ask questions such as:

1. **What specific threat do we want to build resilience to?** What shocks and stressors are the major challenges?
2. **Who needs to be more resilient?** Here it is vital to remember intersectionality[39], break down the specific population that needs to build more resilience and identify why and how they are vulnerable to the shocks and stressors.
3. **Where should resilience be built?** Both the physical and social context matters.
4. **Resilience for what?** Lack of resilience is often a factor why development projects fail. What should the strengthening of resilience contribute to? What threats do we need to be ready to absorb, adapt and transform to in order to reach our goal?



In order to address resilience, we need to make resilience specific and real by asking how a specific group in a specific location or context can become more resilient to a specific threat which might prevent them from achieving a certain goal.

CAPACITIES

Capacities are diverse and each one is important. Resilience is often mistakenly associated with the capacity to absorb, as if resilience was the capacity to withstand the same threat over and over. But resilience does not mean to accept repeated negative experiences. Instead, resilience is to actively react to a threat and challenge its root causes, remembering that even when facing 'natural disasters', what put people most at risk are often human choices and interventions, power imbalances and unjust access to rights and resources.

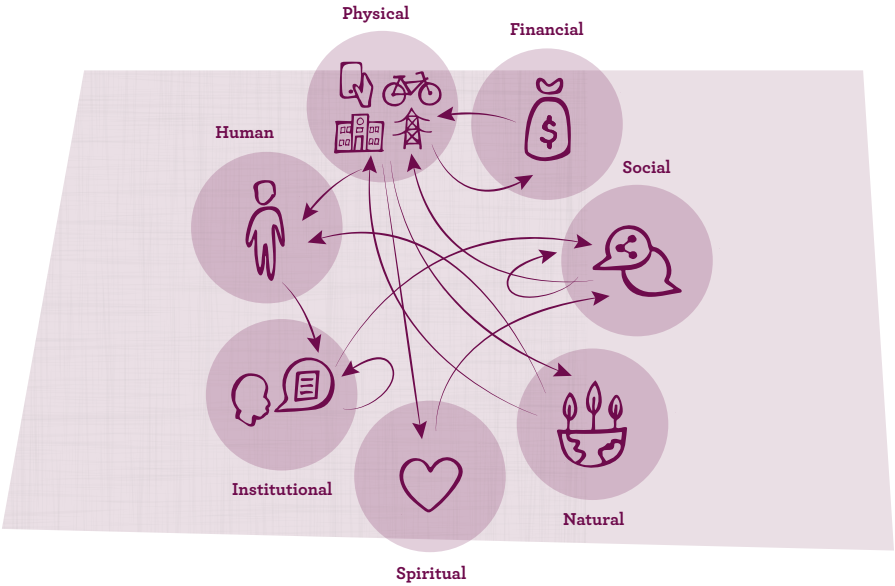
In order to increase resilience, there is a need for different capacities to be combined. No capacity is more important than another and all of them might be needed at the same time. The more capacities that interlink, the better. Even if you are trying to transform a situation of risk, you might still need to adapt to its effects and deal with the occasional disaster. For example, if you are working with the main goal to stop global warming, you might still need to adapt to its effects by creating more flood resistant housing and farming practices, as well as deal with the occasional disaster by creating early warning systems, school shelters etc.

ABSORB Reactive resiliance Focusing on immediate effects Response oriented	**ADAPT** **Adaptive resilience** **Mitigation of threats** **Flexible solutions**	**TRANSFORM** Transformative resilience Focusing on deep root causes Challenging the status quo
Absorptive capacity *is about mitigating impacts of shocks on lives, livelihoods, basic needs.*	***Adaptive capacity*** *is about reducing the potential impacts of threats and their likelihood. We can live with threats.*	***Transformative capacity*** *is about getting to a new state through innovation, reforms or cultural shifts. We live differently.*

DEALING WITH COMPLEXITY

The fact that resilience is complex does not necessarily mean it is complicated. Rather, it means that change does not always happen in the same way and through the same processes. Complexity means that different factors will interrelate differently in different situations. Resilience is about understanding which factors are at play, and how they can be linked to absorb, adapt and transform. It requires us to be conscious of the fact that there is not only one solution but that several options will evolve.

Capitals are resources that can be used to build resilience, one of them is money but there are many other capitals, such as institutional and spiritual capital that tend to be forgotten. It is important and empowering to learn how to identify different types of capital and to be specific when describing them as an asset for resilience. In the Resilience Thinking course, SMC lists seven capitals. These different capitals flow between each other and are interrelated. We need to be able to identify both the capitals we have, and the ones that are missing. Where do we have a lot of capital and power, and where do we have low or no capital?



FINANCIAL	All that is **concerned with money.** For example: availability of cash, savings, loans.
SOCIAL	The connections among **individuals and groups.** For example: partnerships and alliances, setup of groups and clubs and personal connections.
NATURAL	The **ecosystem resources**. For example: forests, quality of water, fertility of soil, climate, etc.
SPIRITUAL	The deepest **values and beliefs** held by individuals and communities. For example: faith, spirituality, trust, motivations.
INSTITUTIONAL	The rules and **policies of institutions of any group.** For example: organisation which can set norms within society, families, government, traditional governance, schooling and religion.
HUMAN	The skills, attitudes, **and strengths of individuals.** For example: their knowledge, their physical strength or their confidence.
PHYSICAL	People-made goods and **infrastructures.** For example: machinery, buildings, road networks, mobile phone networks.

EARLY WARNING SYSTEMS

Early warning systems (EWS) can be used in many different types of situations to give an opportunity to avoid danger and respond properly to shocks like tsunamis, fires and other natural disasters. Having an EWS can mean the difference between life and death. During the tsunami disaster in the Indian Ocean in 2004, many places lacked any kind of warning system. When the early signs of a tsunami appeared (water draining from bays, for example), many people did not realise the danger. If there would have been an alarm and if people living in those areas had had the chance to put themselves in safety on higher ground, thousands of people could have been saved.

Scenario: Consider this hypothetical scenario: a rural area where development organisation TTT is working is prone to flash floods during the rainy season. These flash floods have regularly destroyed houses, infrastructure, and agriculture and even claimed lives. Seeing this and hearing feedback from the community, TTT decides to create an early warning system together with community members. The goal is to create resilience to the flash floods in this rural area.

Early Warning System for Flash Floods:

1. **Data collection and monitoring:**
   - **a.** Set up rain and river sensors in key spots (these could also be 'analogue' in the sense that people living upstream could have the task to check the water levels regularly).
   - **b.** Collect data on rainfall and river levels.
2. **Alert people at risk:**
   - **a.** When heavy rain is detected, send text messages and use local radios to warn community members.
3. **Community involvement:**
   - **a.** Train community leaders to share alerts in villages.
   - **b.** Train community members how to prepare for floods and where to find safe spots.
4. **Supplies and drills:**
   - **a.** Store emergency food, water, and first-aid kits nearby.
   - **b.** Practice flood response together with the community.
5. **Monitoring and learning:**
   - **a.** Keep an eye on the weather and river levels.
   - **b.** Improve the system based on what works best.

This EWS helps communities to get ready for floods, keeps them safe, and reduces flood impacts. It is a vital tool for development in flood-prone areas.

If you want to learn more about resilience thinking, we recommend you to visit SMC's learning site https://fabo.org/smc/resiliencematters and go through their online training that introduces concepts, tools and examples in an accessible and engaging way.

Protecting and Enhancing Biodiversity

BIODIVERSITY[40] IS TRADITIONALLY defined as the variety of life on Earth in all its forms. It comprises the number of species, their genetic variation, and the interaction of these life forms within complex ecosystems. Biodiversity loss is caused largely by changes in land use, e.g. deforestation, intensive monoculture and urbanisation, direct exploitation such as hunting and over-fishing, climate change, pollution and invasive species.

Several methods from the cases in this toolbox are benefiting biodiversity, such as conservation agriculture, Zai Pits and agroforestry. Agroforestry is especially important to mention here, since one of the pillars of agroforestry is maximising diversity. **Agroforestry** is a sustainable land management approach that combines agriculture (crop or livestock farming) with the cultivation of trees or shrubs in the same land area. It involves deliberately integrating woody plants into farming systems to create mutually beneficial relationships between trees, crops and animals.

In agroforestry, trees can provide a range of benefits such as shade, windbreaks and timber. The combination of trees and crops can improve soil fertility and prevent erosion. Trees may produce fruits, nuts or other products alongside traditional crops. The diverse plantings can enhance biodiversity and support wildlife habitat.

Agroforestry promotes both environmental conservation and increased agricultural productivity while fostering sustainable land use practices. It is an important strategy for mitigating climate change, promoting resilience and providing additional sources of income and nutrition for rural communities.

Other ways to contribute to biodiversity include:

- Community-Led Conservation: Encourage and support local communities to take the lead in conservation efforts. Help them establish community-based conservation areas, engage in sustainable land-use practices and actively participate in protecting biodiversity.
- Education, Advocacy and Awareness: Raise awareness about the importance of biodiversity. Conduct educational programmes to inform locals about the value of wildlife, ecosystems and sustainable practices, fostering a sense of responsibility for preserving biodiversity.

The UN Environment Programme, Trillion Trees and WWF have created a guide for how to do tree planting in a way that helps biodiversity, local livelihoods and the global climate. The guide is called Tree Growing for Conservation and Ecosystem Restoration: A Guide for Faith-Based Actors. [41]

PROTECTING ANIMALS

In relation to biodiversity, we also want to mention something about protection of animals. In PMU's environment policy we stress a fair and compassionate treatment of animals as valuable members of creation. In all programmatic work, both tame and wild animals should be handled in accordance with best available practice and local regulations. Ensuring a rich biodiversity and a healthy population of fauna is critical to reach sustainable and resilient societies.

Energy

IT IS IMPOSSIBLE to understand our modern society, or our environmental crisis, without understanding energy. According to the definition of Encyclopedia Britannica, "energy is the capacity for doing work"[42]. Most of the energy on the planet comes from the sun. The rise of solar power/solar panels is of course one testament to the power of the sun, but the sun is also the energy source of many other things. The sun drives the photosynthesis that makes plants grow, and those plants in turn fuel people and animals. So basically, we all run on solar power! But what about the fossil fuels oil, coal and gas? They are all remnants of old carbon-based living things like plants and animals that have been compacted over millions of years, so in essence, fossil fuels is stored solar power as well. The problem with energy based on fossil fuel is twofold:

1. When fossil fuels are burnt, it releases greenhouse gases into the atmosphere, contributing to global warming.
2. Fossil fuels have always accumulated other toxic substances. This is the reason why burning fossil fuels causes harmful exhausts that cause pollution if they are burned, released or leaked into nature.

Throughout most of history, humans have depended on manual labour for almost any work, either doing the work ourselves or using animals. With the introduction of fossil fuels and the generation of electricity, often produced with fossil fuels, we suddenly had massive amounts of energy that enabled trains, cars, machines and industries to work. This created high energy-societies that are constantly aiming for more growth. This idea of constant growth is very difficult to combine with sustainability and living in harmony with nature. There is a need to get away from the massive excess energy consumption and instead make sure all people have access to renewable electricity. We need to use energy in a different, more conscious way as well as utilising renewable sources such as solar and wind.

CASE: *Solar Technician Courses in Yemen*

ONE OF THE key aspects of solving deforestation and stopping the burning of fossil fuels relates to energy. In Yemen, solar power is now helping communities cook food in a sustainable way. By using solar cookers and solar panels, people can move away from burning wood, charcoal and fossil fuels, and rely instead on renewable energy from the sun.

PMU's partner in Yemen has created *The Solar Technician Course* which teaches Yemenis how to design, install and maintain solar PV systems. During the course, each participant must build a DC and AC system and be approved by the instructors. The average graduate of the course will troubleshoot and repair 5 existing systems and install 5 new PV solar systems in the first 90 days after the course. The Solar Programme also includes solar cooking (using thermal reflectors) with live demonstrations in the class.

"Even if only used for one meal per day, solar cooking has the ability to cut the cooking fuel costs for Yemenis by 30 percent", says project staff.

Solar power is an important part of the energy system of the future, but it is vital to have technical expertise and a plan for maintenance, to ensure sustainability of such projects.

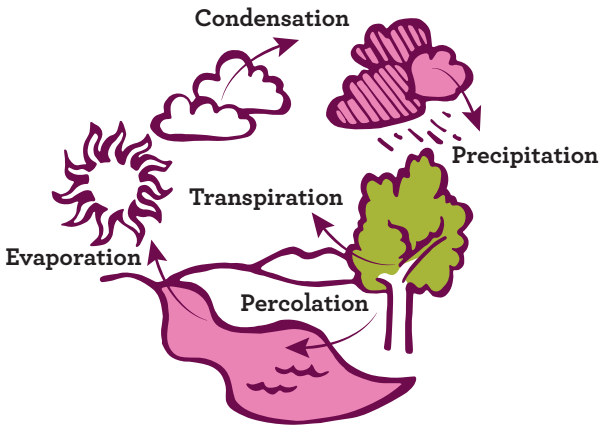
"The Capacity Building trainings have been a fantastic way to use our proven content to benefit the local like-minded community. The project participants are provided with the Solar Course modules from which they choose the topics that they think would most benefit their community. The feedback from the participants has been overwhelmingly positive and they have implemented what they have learned at the individual, family, and community level", says project staff.

Water Management

MANAGING OUR FRESHWATER resources is vital to achieve sustainable and flourishing communities. We often do not realise how much water is needed for everyday life, or how many ways there are to conserve, manage and harvest water.

Integrated Water Resource Management is a holistic approach to water use and management. It is a systemic and sustainable approach that takes into consideration the limited nature of water resources and the effects of negative impacts on this resource. Stockholm International Water Institute (SIWI), among others, have guides explaining how to do integrated water management in practice.[43]

When doing water management, it is very important to consult experts. It is important to have knowledge of the geology and hydrology of the local context, as well as employing a conflict sensitivity approach.



The water cycle

CASE: *Growing Food in Water Stressed Areas in South Sudan*

IN REMOTE PARTS of South Sudan like Kapoeta East, already dry areas have been further water stressed by climate change. It is very challenging to find enough water to drink, farm and maintain livestock. In this context, PMU's partner organisation ACROSS is working with a method called Zai Pits that is originating from Burkina Faso. With this innovative technique, food can still be provided despite the harsh conditions.

"We are utilising Zai Pits in order to grow maize in these conditions. Pits are dug up and filled with some manure and organic matter, after a couple of weeks we sow in the middle of the pits. When rain comes the Zai Pits design makes sure that the water benefits the crops and doesn't just drain away", says Peter Lokoji, Project leader.

Managing water is one of the key areas for sustainable food production going forward, and utilising different types of water management and harvesting techniques will be crucial in a more extreme global climate. When reforesting a dry area, digging pits, bunds or half-moons for more effective water retention can make all the difference between a lush forest or a barren wasteland.

The Need of Advocacy for a Better System

THE WORLD IS in great need of change. It is full of injustices, inequalities and destruction. Some of the suffering is caused by individual behaviour but a lot of it is due to systems, laws and institutions. In order to fix these deep-rooted problems, we need to work to change the systems and structures that enable and encourage inequality and injustice.

For the theme of environment and climate, that means working to have laws and regulations that support and encourage environmentally sound initiatives and prevent and punish environmental destruction. One global advocacy effort aiming to create such change at a global level is the campaign to instate ecocide as an international crime.

Ecocide means mass damage and destruction of ecosystems – harm to nature which is widespread, severe or systematic. *Eco* derives from the Greek *oikos* meaning 'house' or 'home' and *cide* from the Latin *caedere* meaning 'strike down', 'demolish' or 'kill'. In other words, ecocide means 'killing our home'. The idea is to make the worst cases of environmental destruction criminal on an international level, and therefore impose a duty of care on those with the power to make decisions that affect humanity as a whole. That means, for example, that if a CEO of an oil company approves an oil project, knowing there is a great risk for a massive oil spill, and that oil spill occurs, the CEO can be criminally charged in a court of law. This would be a difference from the current system where companies are willing to pay a fine for polluting the environment if an oil spill occurs, because the profit simply outweighs the penalty by too much.

Another global advocacy effort gaining traction is the *Fossil Fuel Non-Proliferation Treaty*. This is a civil society campaign with the aim to create a treaty to stop fossil fuel exploration and expansion, phase out existing production in line with the targets of the Paris Agreement, while supporting a just transition to renewable energy. This effort was pioneered by coalitions of states that are most vulnerable to climate change, which has since then turned into a global campaign supported by a vast number of actors, from the civil society actors, Nobel laureates and the Vatican

to the EU parliament. This campaign is a response to the unsuccessful attempts by governments to set climate targets for emissions and trying to reduce the demand for fossil fuels.

Exercise:

1. What specific environmental issue does your organisation have an opportunity to do advocacy work for? Locally or globally.
2. Choose a method (social media campaign, a march, talk to politicians, organise a town hall etc.).
3. Do a risk analysis of your chosen topic/method.
4. What other actors could you collaborate with? Is there already a campaign you want to join?
5. Do a roleplay where you practice talking to a duty bearer/person of influence, or in other ways prepare for the action you are about to take.
6. Just do it!

Doing an Environmental Assessment

THE SWEDISH GOVERNMENT agency for development cooperation, Sida, provides guidance around environmental integration and environmental assessments in their Green Toolbox, which is available online.[44] They write: "Environmental integration goes beyond 'do no harm' – it requires you as an organisation to adopt the mind-set that sustainable development results cannot be delivered without considering and adhering to the planetary boundaries."

The assessment needs to be adapted to the scope and focus of the project or programme. It could be anything from a simple exercise that involves a small team for a few hours, to a more extensive process that engages large parts of the organisation over a period of time. To make it a successful process where people feel ownership, it is often beneficial to engage different parts of the organisation, as well as other stakeholders.

When analysing your own organisational capacity you might realise that you lack skills or competence in regards to environmental issues. Make a plan to solve this, for instance by partnering with a local university or another development actor specialising in this field, engaging an environmental consultant, or contacting PMU.

Environmental assessments is the most basic and vital tool for integrating environment into planning, implementation and monitoring of projects and programmes. An environmental assessment can be divided into three different levels, or criteria:

1. **Opportunities for positive environmental impact from the project on the environment:**

    a. What are the potential positive contributions from the project in terms of reducing pollution and emissions of greenhouse gases, halting loss of biodiversity, and environmental protection? This could for example be described in absolute terms such as kg of carbon captured, or in terms of strengthening legal and institutional capacity to address such issues. It can be beneficial to list and rank these.

b. What measures can be taken to enhance positive contributions?
c. What targets and indicators can be used to monitor these measures?

2. Risks for negative environmental impact from the project that can harm the environment:

a. What are potential negative impacts and risks in terms of pollution of land, air, water and soils, climate impact and loss of biodiversity, given the scope of the project and the geographical and environmental context? How can these potential negative impacts and risks be ranked (in order)?
b. What measures can be taken to manage and mitigate these risks?
c. What targets and indicators can be used to monitor the management of these risks?

3. Risks from environmental degradation, climate change and loss of biodiversity affecting the sustainability of the project:

a. How resilient is the project to these types of risks? What are the potential environment-related risks threatening the sustainability of the project? How can these risks be ranked?
b. What measures can be taken in order to manage and mitigate these risks?
c. What targets and indicators can help monitor the management of these risks?

The importance of being context sensitive was mentioned in the beginning of this section and doing an environmental assessment is in itself also an exercise in reflecting on the context one operates in. But it can be helpful with some more guidance:

4. Context analysis

a. What does the context look like now and what environmental problems can be foreseen in the future?
b. How does the environmental situation impact the people and their health, well-being, livelihood and security, now and in the future?
c. How are different groups (including women, men, boys and girls) affected by environmental degradation, climate change and loss of biodiversity?
d. How can national, regional and/or international legal mechanisms (e.g. conventions and agreements such as the UN Framework Convention on Climate Change, UNFCCC and the Convention on Biological Diversity, CBD) be taken into account?

CASE: *Farmer Field Schools in Uganda*

THE ORGANISATION JUST Earth Uganda is working through the concept of *Farmer Field Schools* in order to increase the status of farming in Uganda and educate farmers on how to increase yields, create resilience and take care of creation. The idea is that farmers share their time between the demonstration plots and the learnings that take place there, and their own farms. The experts at Just Earth also visit the project participants' farms to give direct feedback and advice.

"We are teaching everything that has to do with farming. How to sustainably manage the land, regenerate soil life, control pests in organic ways, harvest water, and also the business side of farming", says Amos Ssekigudde, agronomist at Just Earth Uganda.

Everything is done with creation care in mind, which they see goes hand in hand with better yields. Now even more emphasis is being put on increasing forest cover through encouraging investment in standalone woodlots and agroforestry-bushes in biodiverse agroforestry systems.

"Restoring nature in Uganda, and elsewhere, requires a combined effort of the entire rural farming community. Just Earth Uganda has helped many families build hope and create a profitable future in farming. These families are now focusing on conservation of nature for a better future in farming", says Amos Ssekigudde.

Concluding words

WE HAVE WRITTEN this tool box because we believe that there is an enormous potential in PMU's network of faith based and civil society organisations to act in the dire situation that the world and its ecology is facing. The cases from PMU's partner organisations in this tool box only comprises a small portion of all the good work that is being done on creation care and resilience building within our network.

In the name of environmental justice, it is only proper to end this tool box with a call to action, especially directed towards the high emitters and big polluters. The sad reality of the global ecological crisis is that it is driven primarily by a wealthy elite of the highest earners, but the impacts are primarily felt by people barely contributing to the crisis at all. This is an unacceptable injustice. It calls for deep reflection from everyone with a large ecological footprint, for all big corporations and for all decision makers in medium and high-income countries.

Everybody needs to realise and embrace their possibilities to renew, restore and heal creation. Hopefully this book can be a useful tool in that transformation.

Endnotes

The Bible quotes are taken from the New International Version (NIV).

1 Read more about Shalom on page 34

2 https://news.mit.edu/2017/johan-rockstrom-framework-for-preserving-earth-resilience-0926

3 All reports and summaries can be found on ipcc.ch.

4 For updated numbers see https://www.globalcarbonproject.org/

5 https://edition.cnn.com/2022/05/18/asia/climate-india-pakistan-heatwave-intl/index.html

6 Rockström, J., Steffen, W., Noone, K. et al. A safe operating space for humanity. Nature 461, 472–475 (2009). https://doi.org/10.1038/461472a

7 https://www.stockholmresilience.org/research/planetary-boundaries.html

8 Biodiversity loss can also be referred to as "Loss of biosphere integrity" or "biodiversity loss and extinctions".

9 Wilcox, Chris, Erik Van Sebille, and Britta Denise Hardesty. "Threat of plastic pollution to seabirds is global, pervasive, and increasing." Proceedings of the national academy of sciences 112, no. 38 (2015): 11899-11904.

10 https://edition.cnn.com/2022/10/31/us/microplastic-credit-card-per-week/index.html

11 No Plastic in Nature: Assessing Plastic Ingestion from Nature to People (2019). An analysis for WWF by Dalberg and the University of Newcastle Australia. https://d2ouvy59p0dg6k.cloudfront.net/downloads/plastic_ingestion_web_spreads.pdf

12 In the scientific literature air pollution is often called "atmospheric aerosol loading"

13 2021 State of Climate Services: Water. World Meteorological Organization (2021), https://library.wmo.int/idurl/4/57630

14 Loss of ozone layer is sometimes called "stratospheric ozone depletion".

15 Shared Planet: Religion and Nature, BBC Radio 4, 01-10-2013

16 Wright, N. T and James. Langton. Surprised By Hope: Rethinking Heaven, the Resurrection, and the Mission of the Church, published by HarperOne (2008)

17 Hannah Rich, 'Growing Good: Growth, Social Action and Discipleship in the Church of England', published 10th November 2020.

18 See also: https://climateoutreach.org/reports/climate-change-faith/, https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html https://lausanne.org/content/statement/creation-care-call-to-action, and https://lausanne.org/wp-content/uploads/2021/10/The-Cape-Town-Commitment-%E2%80%93-Pages-20-09-2021.pdf

19 https://www.nationalgeographic.com/environment/article/ethiopian-church-forest-conservation-biodiversity

20 Al Tizon (2018), Whole and Reconciled: Gospel, Church, and Mission in a Fractured World, Baker Academic of Baker Publishing Group, p 85

21 https://learn.tearfund.org/en/resources/policy-reports/wholly-living-a-new-perspective-on-international-development

22 The Bible tells over and over about how there will be a restoration, reconciliation and rectification of all creation, see for instance Isaiah 11, Mathew 19:28, Acts 3:21, Romans 8:19-23, Col 1:19-20, and Revelation 21:1-4. The Bible talks in several places about a new heaven and new earth, which many leading theologians argue is best understood as a renewal of this creation, see for instance N.T. Wrights book Surprised by Hope.

23 IGI Global, 2021 Retrieved from: https://www.igi-global.com/dictionary/we-are-not-part-of-nature-we-are-nature/69225

24 Redrawn from source: Stockholm Resilience Centre (SRC) • SRC & IIASA, 2016 • Rockström, J and Sukhdev, P. 2016. https://www.dnvgl.com
Folke, C., R. Biggs, A. V. Nordström, B. Reyers, and J. Rockström. 2016. Social-ecological resilience and biosphere-based sustainability science. *Ecology and Society* 21(3):41

25 See for example https://www.axfood.se/nyhetsrum/pressmeddelanden/2018/10/vegotrenden-2018-mer-och-allt-oftare/, https://onlinelibrary.wiley.com/doi/full/10.1111/jiec.13176, https://www.foi.se/rest-api/report/FOI-R--2513--SE

26 For further reading on gender please see PMU:s tool box on Church and gender equality.

27 https://www.ohchr.org/en/stories/2022/07/climate-change-exacerbates-violence-against-women-and-girls

28 https://www.oxfam.org/en/empowering-women-farmers-end-hunger-and-poverty

29 UN Women 2023: https://www.unwater.org/sites/default/files/2023-07/from_commodity_to_common_good.pdf

30 https://www.africanews.com/2022/03/29/kenya-youth-climate-activist-highlights-pollution-on-lake-victoria/

31 https://www.bbc.com/news/world-europe-66923590

32 https://www.newscientist.com/article/dn27774-dutch-government-loses-worlds-first-climate-liability-lawsuit/

33 https://www.smc.global/en/larcenter/rights/#rights-based-approach

34 https://www.kateraworth.com/doughnut/

35 https://doughnuteconomics.org/amsterdam-portrait.pdf

36 https://infocus.wief.org/applying-doughnut-economy-a-guide-for-developing-countries/

37 https://unfccc.int/topics/adaptation-and-resilience/the-big-picture/what-do-adaptation-to-climate-change-and-climate-resilience-mean

38 Knight, T., S. Price, D. Bowler, et al. 2021. How effective is 'greening' of urban areas in reducing human exposure to ground-level ozone concentrations, UV exposure and the 'urban heat island effect'? An updated systematic review. Environmental Evidence 10, 12.
See also: https://wwf.org.au/news/2023/trees-lower-temperatures-in-a-sydney-street-by-20-degrees/.

39 Intersectionality helps us to look into how different systems of discrimination (for ex. gender, ethnicity, religion, disability, sexual orientation or age) are linked and works together.

40 https://www.europarl.europa.eu/news/en/headlines/society/20200109STO69929/biodiversity-loss-what-is-causing-it-and-why-is-it-a-concern

41 Tree Growing for Conservation and Ecosystem Restoration: A Guide for Faith-Based Actors. WWF World Wide Fund for Nature, (2022), https://trilliontrees.org/wp-content/uploads/2022/12/wwf_trillion_trees____tree_growing_for_conservation_and_ecosystem_restoration_guide_d.pdf

42 https://www.britannica.com/science/energy

43 Principles and Practices of Integrated Water Resources Management: Workplace-based Professional Training, SIWI Stockholm International Water Institute (2020), https://siwi.org/wp-content/uploads/2020/11/iwrm-training-manual-1_final.pdf

44 https://www.sida.se/en/for-partners/methods-materials/green-toolbox

We have written this book because we believe that there is an enormous potential in PMU's network of faith based and civil society organisations to act in the dire situation that the world and its ecology is facing. All over the globe, people are feeling the effect of climate change, biodiversity loss and pollution. If we do not address these issues, many people, animals and plants will struggle to survive. It is about life or death. This book provides theological, theoretical and practical perspectives on the many challenges the world is facing in terms of environmental hazards and climate change. But we also provide tools, write about solutions and share good examples of how we, as people of faith, can take action to care for creation.

PMU