

# IMPACT REPORT

A look back at our 2021 journey.  
With illustrations by George Wylesol.

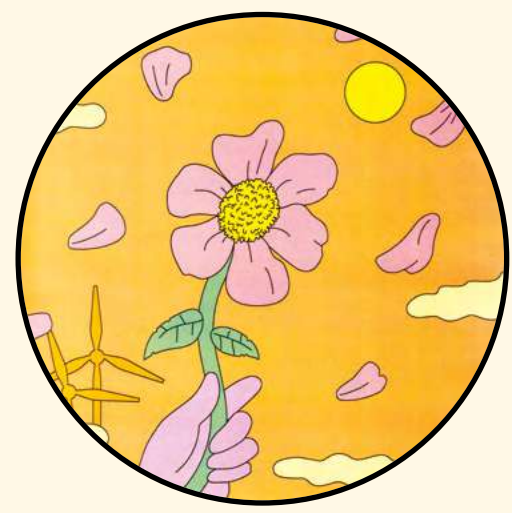
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# Origins

Our story: A collective of one heart, many hands.  
 Our 7 Impact Pillars  
 Sustainable Development Goals (SDGs)  
 Our Business & Governance  
 2021 at a glance  
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# Innovative Materials and Systems

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# Origins

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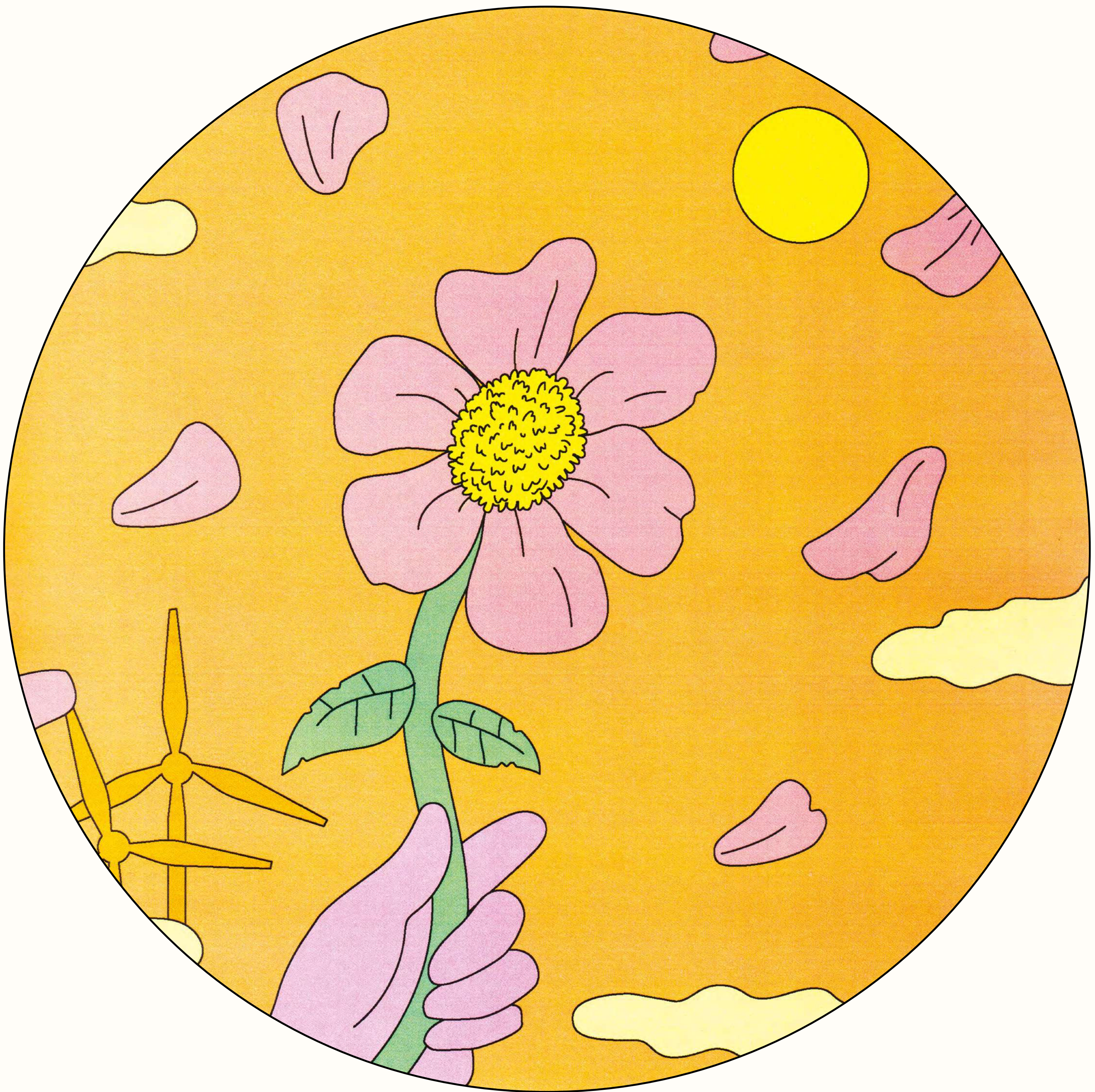
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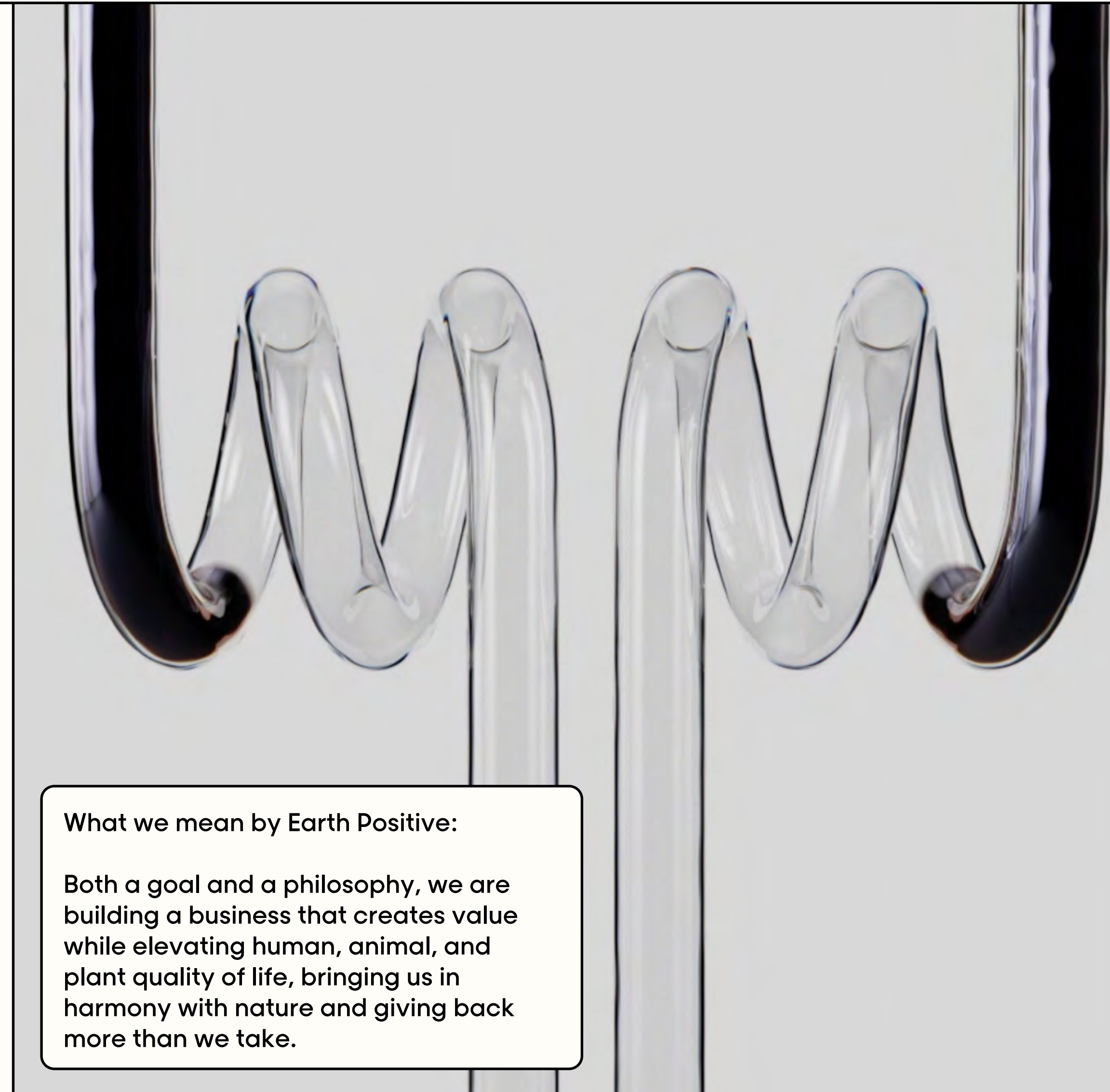
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# Our story: A collective of one heart, many hands.

Just over 2 years ago, PANGAIA emerged as a collective of scientists, designers, technologists, and creatives to create a new kind of business - one that operates in harmony with nature and works to safeguard a future for generations to come.

We call this philosophy Earth Positivity, and it is our north star.



What we mean by Earth Positive:

Both a goal and a philosophy, we are building a business that creates value while elevating human, animal, and plant quality of life, bringing us in harmony with nature and giving back more than we take.

With nature as our greatest ally and biggest inspiration, and science as our compass, we bring to life innovations and showcase how they can be transformed into everyday products. From carbon into eyewear, grapes into leather, pollution into ink, bacteria into color, and flowers into insulation that will keep you warm. We are always looking for ways to do better.

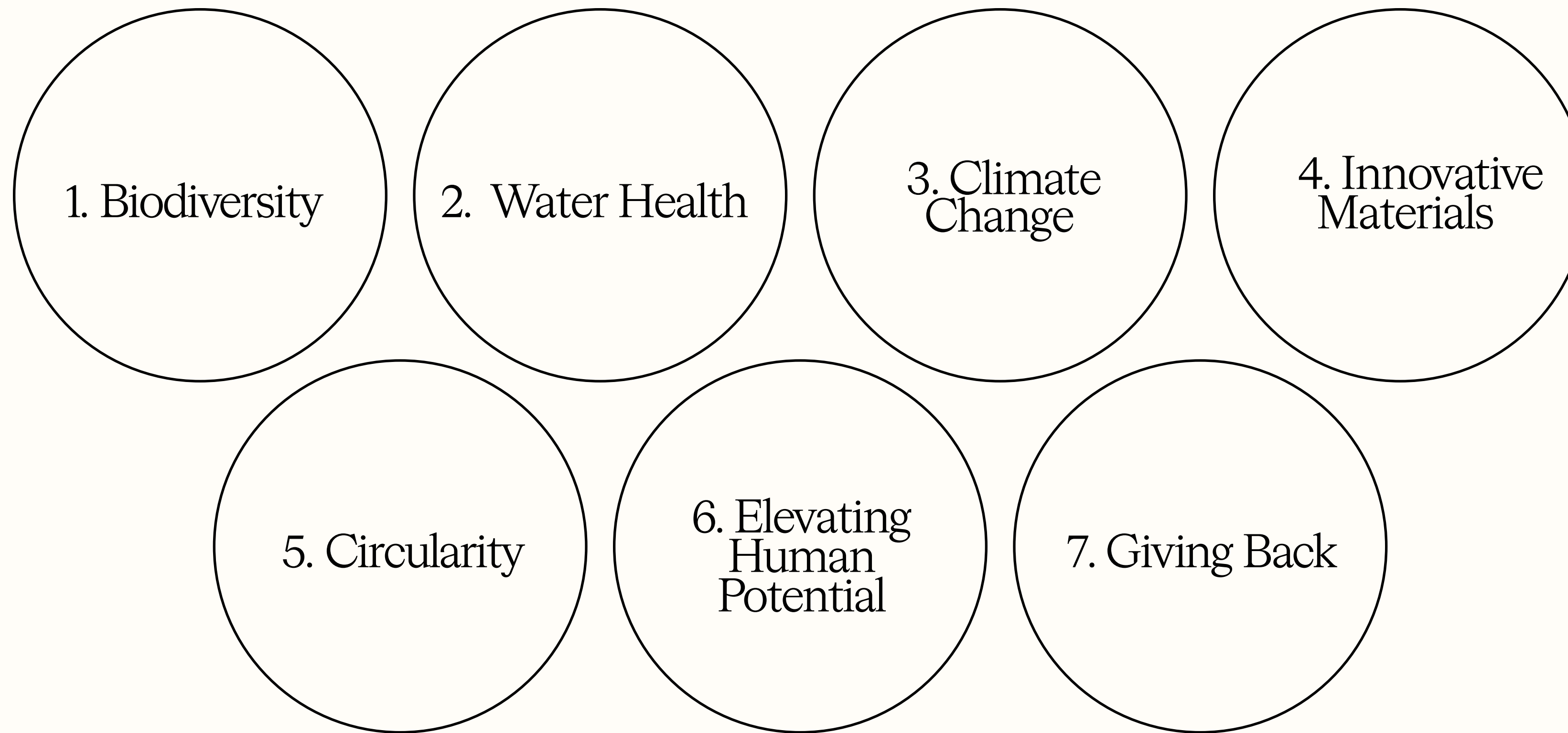
In some cases, we start from ground zero, making baby steps while tackling challenges such as scale and price every day. In other cases, we have invested our time and resources to bring new innovations from our network, collaborations, and partners to a wider market. One of our biggest future investments will be in regenerative cotton, which will support biodiversity and positively impact communities.

We published our first Impact Report in December 2020 and are pleased to share an update on the progress we made in 2021 in this new report. The main focus for 2021 has been PANGAIA Apparel, which generally excludes some of our businesses like PANGAIA Science, which will be woven into our work during the course of 2022.

We understand there is still a long way to the future that we envision. As we progress, we will continue to share our challenges, learnings, and achievements along the way.

# Our 7 Impact Pillars

To help achieve our vision of an Earth Positive future, we focus on 7 pillars of impact that ensure we can meet the social, environmental, and economic challenges we as a business and as a society face.



1. Protect and restore biodiversity by sourcing responsibly and investing in a diverse range of regenerative resources that preserve and promote plant and animal life.
2. Pioneer a water stewardship program to minimize water consumption and prevent unsustainable chemistry and plastic pollution.
3. Become a Climate Positive business, committed to aligning with the most ambitious targets of the Paris Agreement. This means undertaking practices that take more carbon from the atmosphere than we contribute.

4. Help future-proof the industry and the planet through materials science innovations and reducing reliance on non-renewable resources.
5. Extend the life of our resources and products as well as reducing waste and closing the loop on resource use, creating a truly circular value chain.
6. Respect human rights, promote fair, safe, and dignified work, and drive positive change throughout our community.
7. Support the communities around us through donations to and engagement with environmental and social causes and charitable organizations.

# Sustainable Development Goals (SDGs)

To ensure that our strategy is rooted in the wider global agenda, we have aligned our pillars with the UN Sustainable Development Goals (SDGs), otherwise known as the Global Goals. We aim to support the SDGs through our work and our participation in the Fashion Avengers, a working group bringing together fashion companies to inspire and accelerate progress towards the SDGs.

1. No poverty
2. Zero hunger
3. Good health and well-being
4. Quality education
5. Gender equality
6. Clean water and sanitation
7. Affordable and clean energy
8. Decent work and economic growth
9. Industry, innovation and infrastructure
10. Reduced inequalities
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate action
14. Life below water
15. Life on land
16. Peace, justice and strong institutions
17. Partnerships for the goals



# Our Business & Governance



Image by PANGAIA

PANGAIA is headquartered in London, UK, with satellite teams in New York City, Los Angeles, Paris, Florence, and Porto. Initially founded by a core collective of 7 people, in 2021, we employed 143 people globally, who work either in our offices, from home, or a hybrid. We sell most of our PANGAIA products direct to customers through e-commerce, and we had 5 pop-up stores in 2021. We also operate as a Business to Business solution, offering the selection of innovative materials that we work with to industry partners and beyond.

PANGAIA is overseen by an Executive Board of Directors that meets once a week and engages an advisory board to provide support on areas that include brand strategy, sustainability, and innovation strategy. The Board has 8 members, 5 of which identify as women (that's 63%). Our environmental and social purpose is represented and advocated for by the SVP Global Engagement and the Chief Impact Officer, who is also a founding member of PANGAIA.

In addition to this leadership representation, our Earth Positive ambition is integrated into all decision-making, with each department having specific Impact-focused objectives. The Impact department is made up of subject matter experts whose remit is to work collaboratively towards the Impact strategy across the business and with external partners.

# 2021 at a glance

This report outlines the challenges we have faced and the progress we have made in 2021. Some of the achievements we are most proud of include:

- 83% of our products available online are Climate Positive. This means we use the results of our Life Cycle Assessments (LCAs) to offset the footprint to Carbon Neutral. By additionally planting, protecting, or restoring a plant with every purchase, each product becomes Climate Positive.
- All 5 of our pop-up retail stores were carbon neutral! We worked closely with our retail partners like Selfridges and Galeries Lafayette to ensure the associated Greenhouse Gas (GHG) emissions of the building materials, employee travel, and energy powering the shop floor were all accounted for and offset using accredited carbon tokens.
- We launched PANGAIA Lab, a new platform to showcase advanced materials science innovations and new cutting-edge technologies that are ready to scale. The first launch was in partnership with Twelve, the carbon transformation company that captures CO<sub>2</sub> from the air and combines it with water and heat to create multi-use polycarbonate materials. The result was PANGAIA's first-ever sunglasses with CO<sub>2</sub>made® lenses.
- We donated over \$670,000 in total to environmental and social causes. We also provided PANGAIA products to frontline workers and vulnerable young people, adding up to a retail value of over \$1.8m.
- We funded the planting and protection of over 630,000 trees through 11 grassroots NGOs across 15 countries through our Tomorrow Tree fund.
- We donated over \$30,000 from our retail partnerships, pop-ups, and internal sample sales to our Bee The Change fund.
- We published PANGAIA's first Modern Slavery Statement.
- We mapped our Tier 1 supply chain partners, determining production in 6 key countries.
- We mapped and quantified our scope 3 emissions during our first year of GHG accounting, which was a great achievement for us as it quantifies the largest proportional impact and guides our strategy to reduce this footprint.
- We upgraded our Environmental Management System (EMS) to capture more facilities and expanded the reporting of our GHG emissions.
- The PANGAIA team grew and is now made up of over 20 nationalities, speaking over 30 languages.

# An Open Invitation

We believe that no single organization can solve the challenges our society is currently facing alone. PANGAIA is rooted in collaboration and we welcome others to join us on this mission. We invite all brands, institutions, academics, innovators, and educators to talk to us about these challenges and join us ([b2b@thepangaia.com](mailto:b2b@thepangaia.com)) in amplifying and scaling solutions.



PPRMINT™ treatment that enables our product to stay fresher for longer

# Learn more about our policies and how we use data

We acknowledge it is our responsibility to hold ourselves accountable for our actions. Our policies and methodologies set out guidelines on expectations, and pathways for identification, escalation, and resolution should infringement occur.

These documents aim to cover all stakeholders, including business operations, joint ventures, business partners, and all sites that supply products or perform services to us.

We currently have the following formal policies and supporting documents that are reviewed at least once a year by the Executive Board.

- [Modern Slavery Statement](#)
- [Supplier Code of Conduct](#)
- [Community Guidelines](#)
- [How we use data](#)

# Planet

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Our Responsibility:  
climate action, water  
health, biodiversity

# Our planet is perfectly balanced to sustain life. Lucky us!

It is the perfect distance from the sun to support life. It also has the essential life-giving gaseous atmosphere and the Moon's steadying gravitational 'pull.' Earth as we know it was shaped by a series of events over its 4.6 billion year history, but human generated industrialization in the last 2 centuries has triggered new conditions that are shaping the Earth in a different, unintended way.

There is no doubt that accelerated efforts are required to address the current environmental crisis. Our response to this crisis is to act as a vehicle for change and show how protecting our natural environment can be embedded in the fabric of decision-making. That doing business needs to be doing good.

As our mission is to accelerate and inspire an Earth Positive future, we are committed to taking responsibility across 3 planetary pillars; Climate Action, Water Health, and Biodiversity.

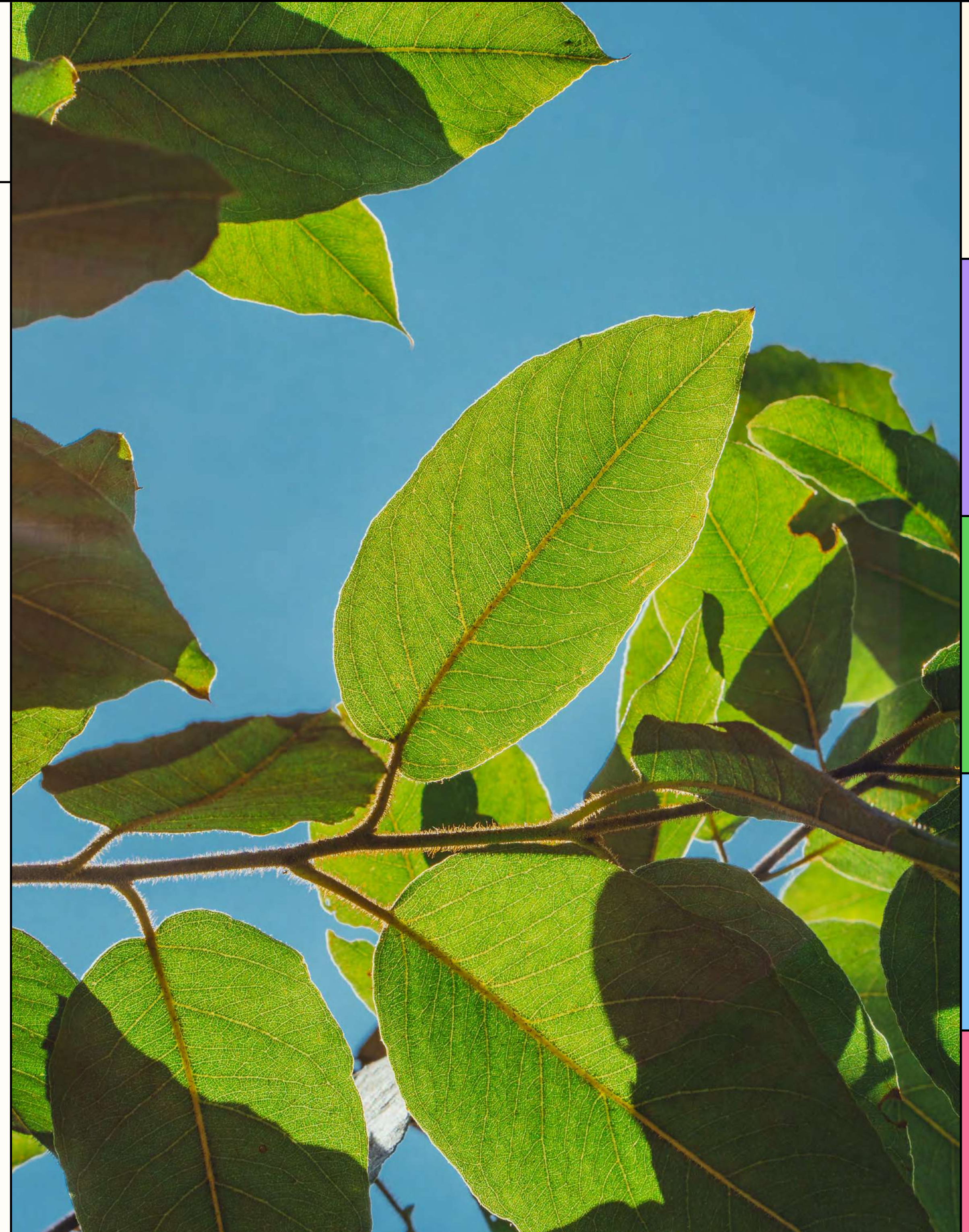


Image by PANGAIA



# Our Focus

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## Climate Action

- Combating climate change and reducing greenhouse gas emissions across scopes 1, 2 and 3.
- Investing in innovative solutions to sequester GHG emissions to align with progressive thinking on science-based targets.

## Water Health

- Reducing our water footprint and improving water quality across our value chain.
- 
- Transitioning away from harmful pollution, including chemical, plastic, and microfiber waste.

## Biodiversity

- Protecting and restoring biodiversity through initiatives like regenerative sourcing.
- Evaluating the impact of the business on our environment and ways of mitigating it.

# Environmental Footprint



Image by PANGAIA

To understand where we must focus our efforts, we begin with mapping and measuring our environmental footprint using the following methodologies:

- The implementation of an Environmental Management System (EMS) to track Energy supply and use, water consumption, and waste across our business operations.
- Life Cycle Assessments (LCAs) of our main material and product ranges, tracking 13 metrics including Global Warming Potential, Blue Water Consumption, and Energy Demand.
- GHG Emission Accounting and reduction roadmap, where we leveraged information from the EMS, LCAs, and additional data shared by our partners to set targets aligned with science-based targets.

We prioritized the measurement of GHG Emissions in 2021 to align ourselves with industry standards, such as the Science-Based Targets, which is a partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI), and the World Wide Fund for Nature (WWF). We were also able to start mapping our water footprint and evaluate water risk across our value chain. Through our environmental footprint calculations listed above, we also began collecting data that will inform our biodiversity approach for the years ahead.

# Climate Action

While **Greenhouse Gases (GHG)** While Greenhouse Gases (GHG)

Greenhouse Gases (GHG) occur naturally and serve an essential role in regulating heat and making this planet livable, human activity has disrupted this delicate balance and our planet has reached a tipping point. To protect habitable levels, scientists call for a reduction in emissions to limit global temperature rise to less than 1.5 degrees by 2050.<sup>1</sup>

As part of our Earth Positive philosophy, we are committed to embracing a low emission future and decoupling our growth from climate impacts.

Climate science recommends we focus on reducing our most significant footprint first. Therefore, our biggest efforts in 2021 have been pinpointing our biggest sources of emissions and creating a decarbonization roadmap.

We're proud of this:

We benchmarked our GHG Emissions across scopes 1, 2, and 3 in 2021, estimating we emitted over 10k tonnes of CO<sub>2</sub>e. From here, we defined our decarbonization roadmap that takes us to Net Zero by 2040, aligned with Science-Based Targets.

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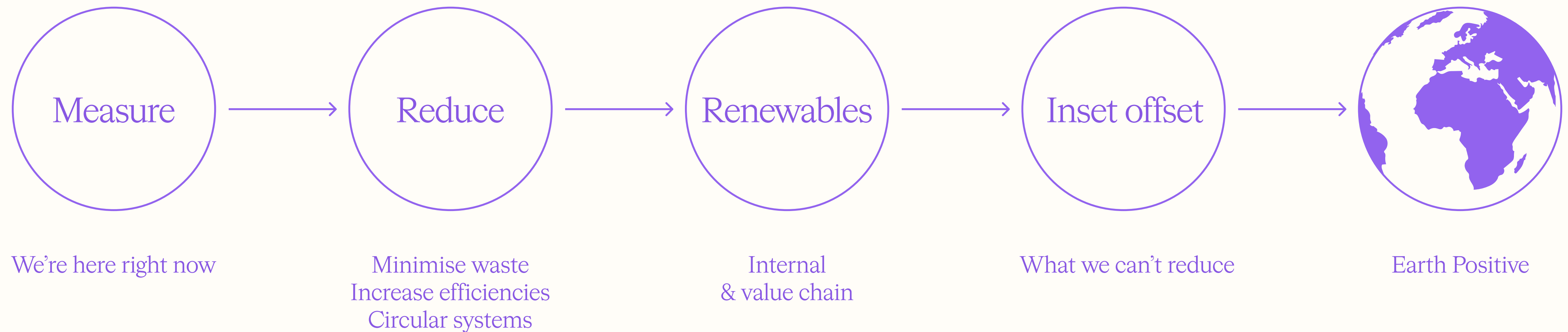
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# Our carbon commitments

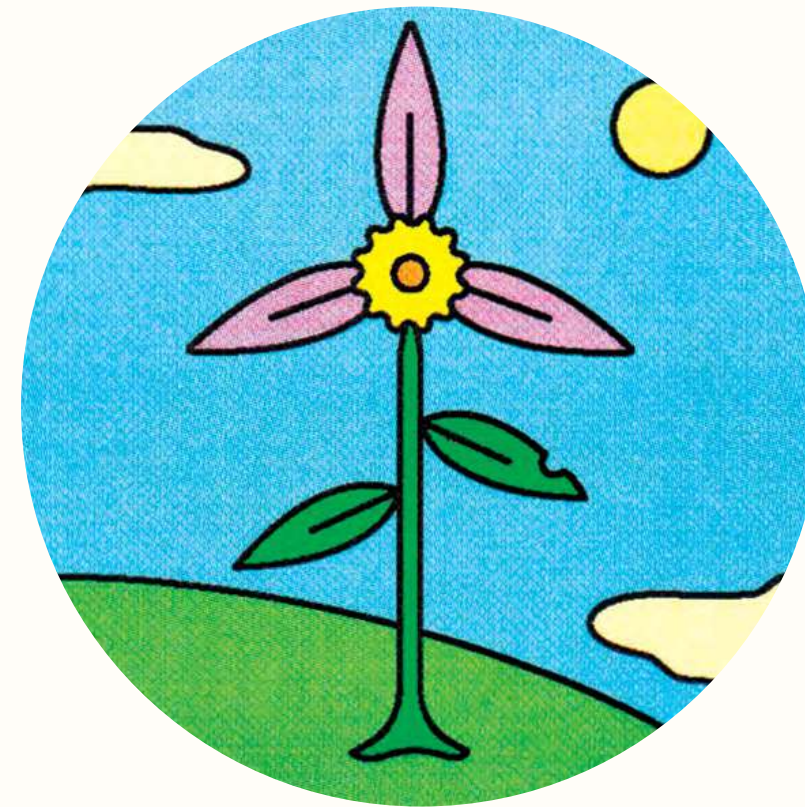
- Net-zero across our own operations by 2025 (scope 1)
- Reduce our emissions by half by 2030 (scope 1-3)
- Achieve Net Zero by 2040 (scope 1-3)

# Our climate action journey

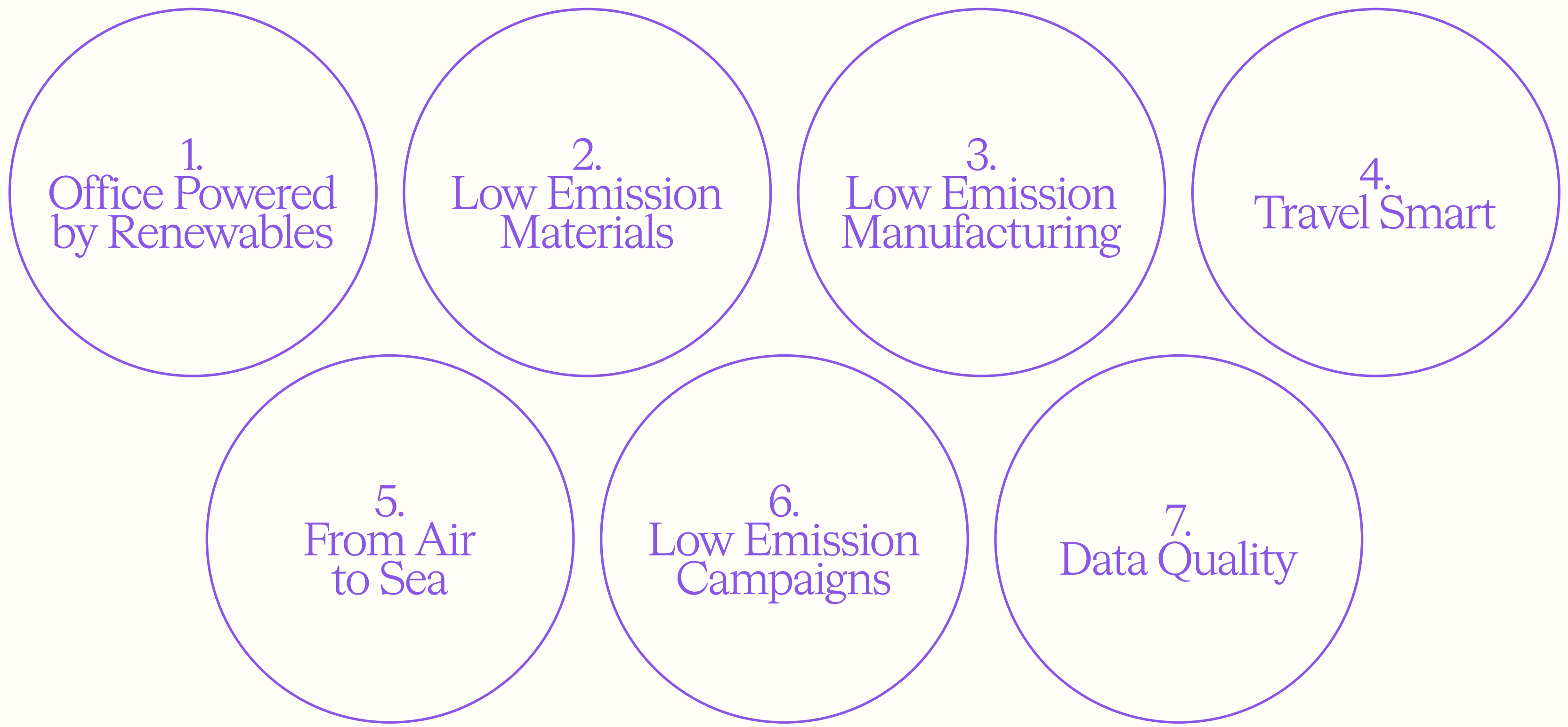
We're outlining our climate action journey:



So, how will we reduce our overall emissions by half by 2030 and to net zero by 2040?

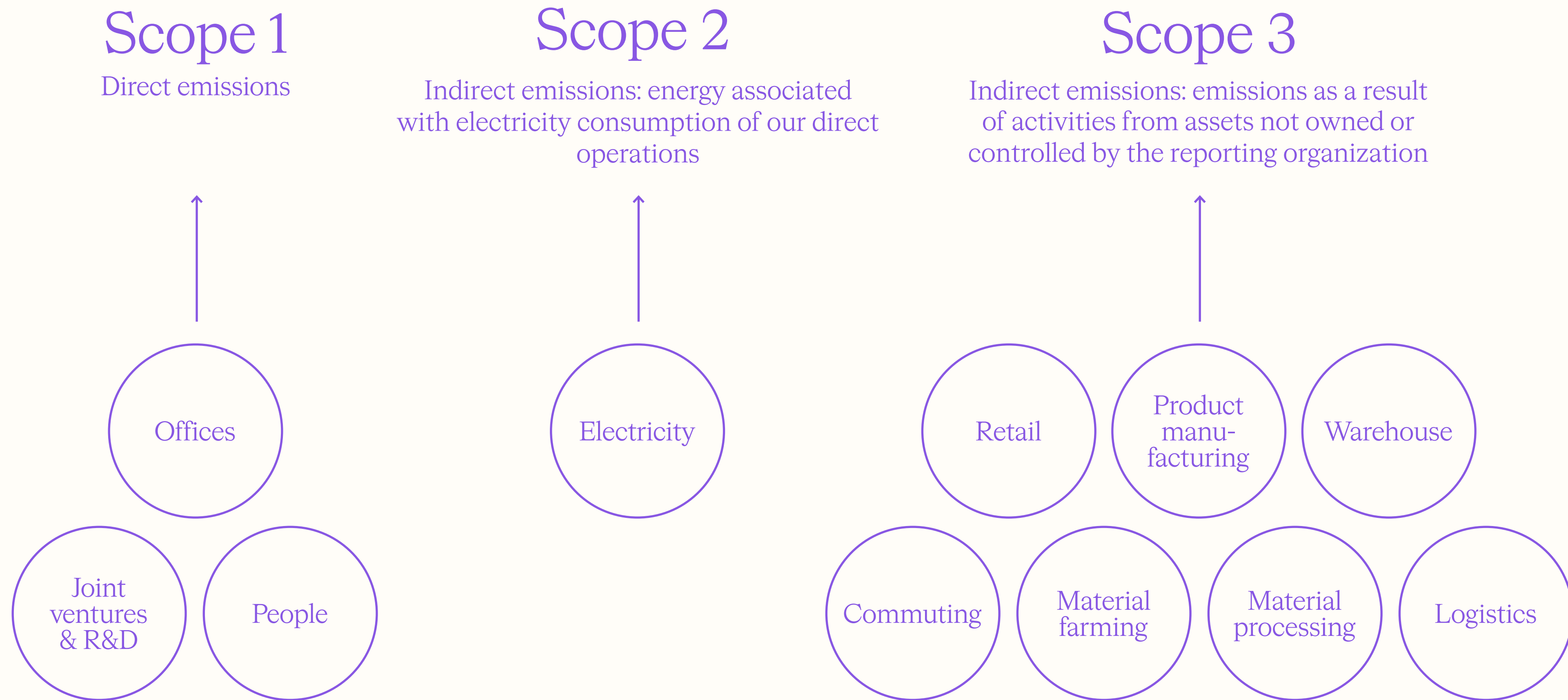


Our 2021 impact assessment identified our biggest hotspots. Our climate strategy will, over time, phase out non-renewable energy and increase energy efficiency, investment in carbon sinking projects, and other initiatives. Finally, any unmitigated carbon emissions will be addressed by using good quality offsets.



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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. Transition gas and electricity to renewable sources at our offices and other sites, and encourage our partners to do the same.</li> <li>2. Continue to drive innovation to develop, use and share more sustainable, climate friendly materials and products. Switch to low emission fibers and practices. Reduce sampling emissions. Switch to low emission materials in retail spaces.</li> <li>3. Work with suppliers and peers to introduce better, less polluting and lower emission manufacturing processes.</li> </ol> | <ol style="list-style-type: none"> <li>4. Reduce flights and switch to balanced home working and public transport commuting.</li> <li>5. Encourage our customers to consider more sustainable choices, including how and when their garment is delivered by offering sea delivery options, reducing downstream logistics emissions</li> <li>6. Active engagement with Marketing, Advertising &amp; Campaign partners to reduce emissions.</li> <li>7. Achieve data integrity &amp; improve coverage of our GHG Emission Accounting.</li> </ol> |
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# Understanding our GHG footprint



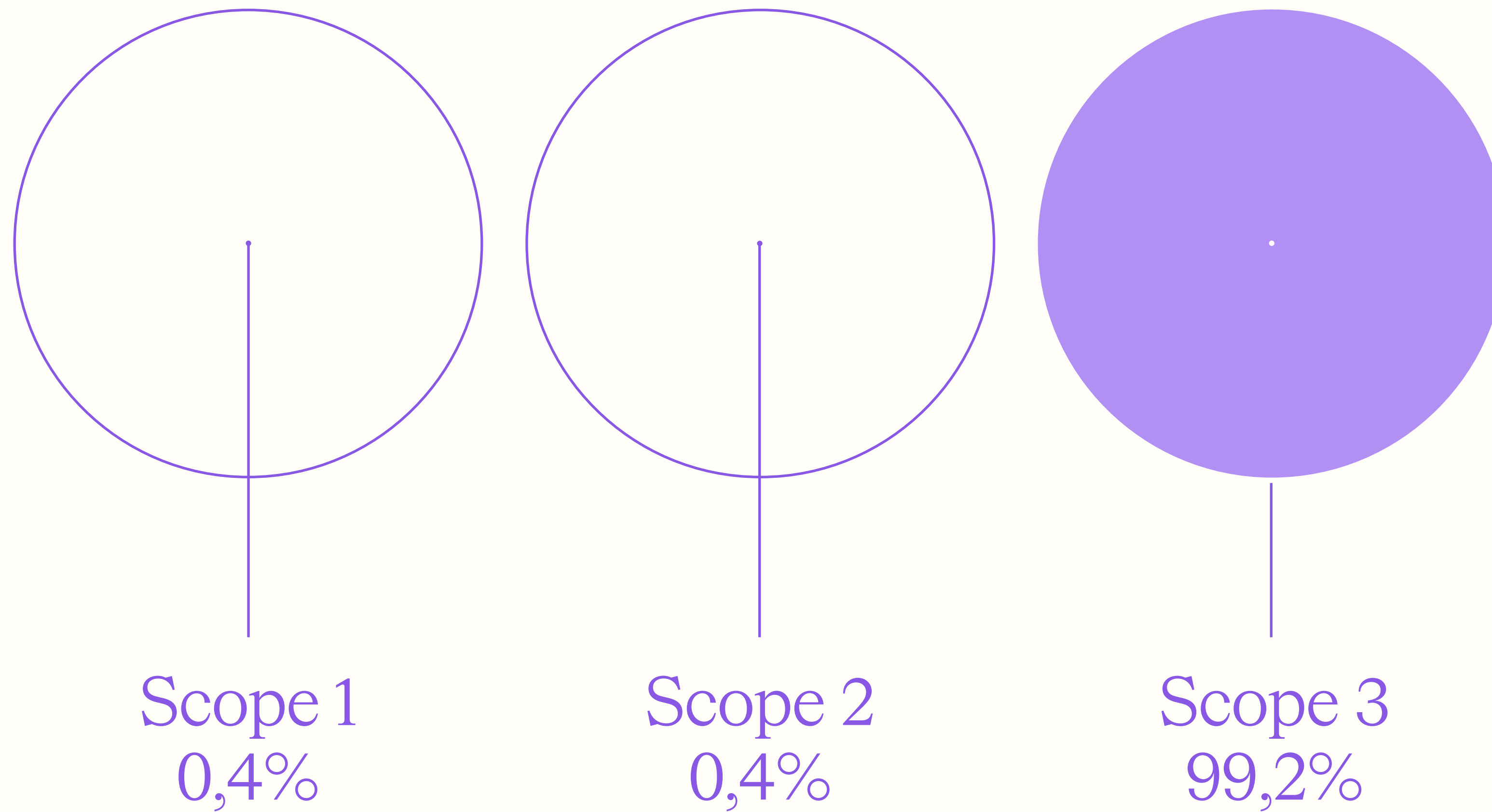
Greenhouse gas emissions are categorized on a scope 1-3 basis.

Scope 1 and 2 emissions are those we have direct influence and control over, such as our offices. We discovered these emissions accounted for just 1% of our total footprint in 2021.

Scope 3 emissions are those associated with our value chain, including raw materials and manufacturing, which we are indirectly responsible for. This is where the vast majority of our GHG emissions take place, accounting for 99% of our total footprint in 2021.



# Pangaia scope 1, 2, 3 Emissions 2021



# Our partners on this journey:

To assess our current emissions and define a reduction strategy we work with external experts. Carnstone assesses our emissions data using recognized methodologies and Carbon Footprint helps us calculate the associated GHG emissions of our retail events. We also partner with Green Story to identify accredited carbon token projects to offset carbon as an interim solution on our way to reducing our footprint to net zero by 2040.

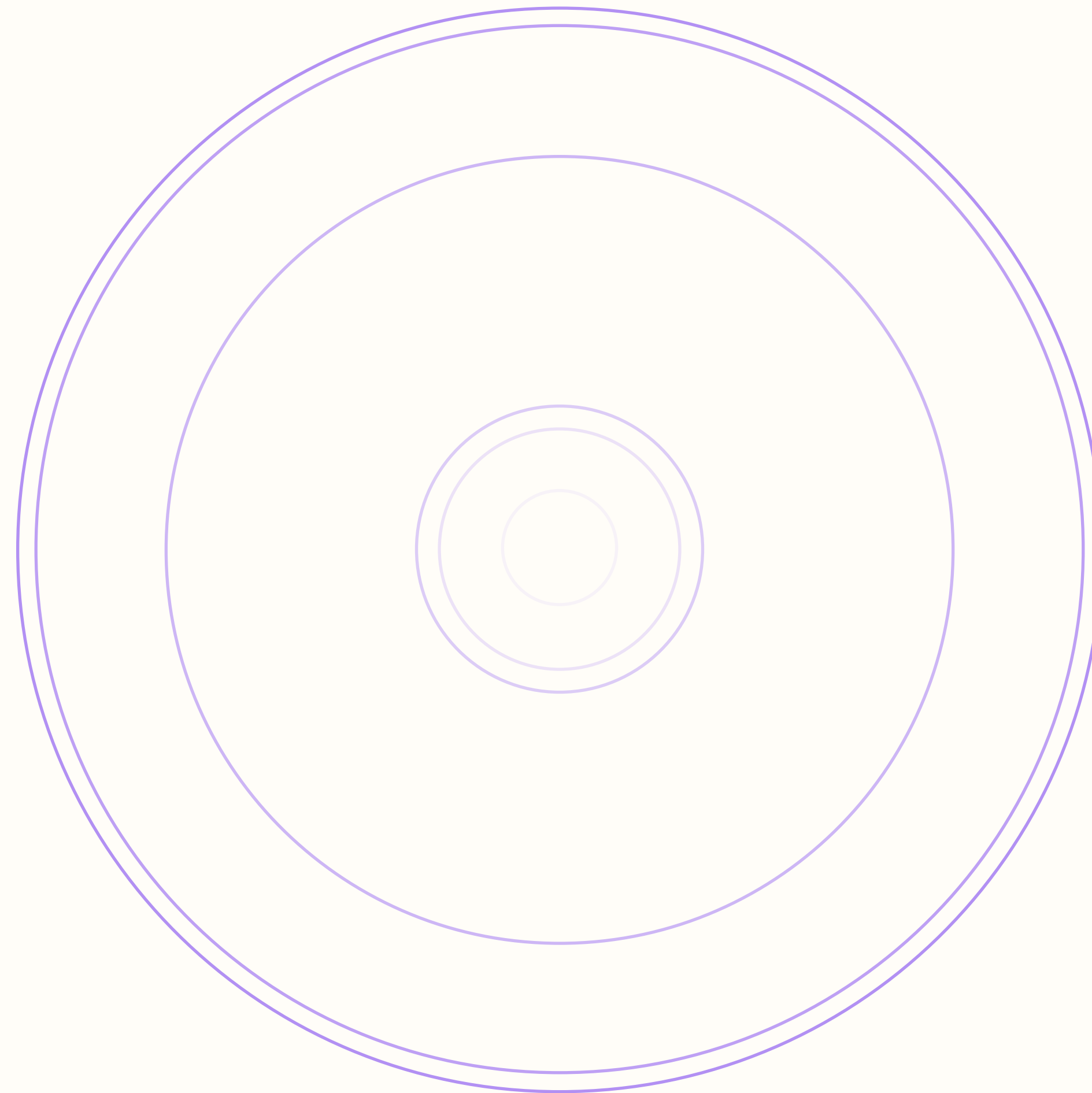
We're proud of this:

Mapping and quantifying our scope 3 emissions during our first year of GHG accounting was a great achievement for us\* as it quantifies the largest proportional impact and guides our strategy to reduce this footprint

38%  
Goods For Resale

36%  
Downstream transportation and distribution

21%  
Goods Not For Resale



3%  
Retail Pop Ups

2%  
Upstream transportation and distribution Business travel

0,4%  
Gas  
Electricity  
Employee commuting

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# Scope 1-2 emissions

A large portion of our emissions in scope 1-2 in 2021 was from gas heating and electricity for our offices, with only 12% of this electricity from renewables. We have committed to increasing this to 100% by 2025. Although this portion doesn't dominate our footprint, all of these efforts count towards our commitment to achieving net zero by 2040.

## We're proud of this:

We upgraded our Environmental Management System (EMS) to capture more facilities and expanded the reporting of our GHG emissions.

# Scope 3 emissions

Transport and distribution make up 38% of our scope 3 emissions. Our main logistics provider is DHL Go Green, which delivers PANGAIA items to our customers using a carbon neutral service.

## What we learned:

Currently, most of our products travel to customers by air, which is 100 times more carbon-intensive than by sea. By diverting just 10% of our products to sea, we could save 400 tons of Co2e - we're working on that!

The products we make and the supply chains attached to them also account for 38% of our scope 3 footprint, particularly in the stages of dyeing and processing, followed by yarn production. We are currently working closely with our innovation arm, PANGAIA Science to bring solutions to market.

## We're proud of this:

All 5 of our pop-up retail stores were carbon neutral! We worked closely with our retail partners like Selfridges and Galeries Lafayette to ensure the associated GHG emissions of the building materials, employee travel, and energy powering the shop floor were all accounted for and offset using accredited carbon tokens.

Every other activity in the business, including packaging, marketing, samples, and consulting, accounts for 21% of our emissions. This 'other' bucket had a greater footprint than we imagined. The primary areas of impact were found across marketing materials, consultancy relationships, packaging, samples, design, accessories, and events. This was a good reminder that absolutely everything has an associated footprint and that collaboration and active engagement with our partners is required on a systemic level to reduce emissions.

# Balancing the need for action

We are under no illusions. We know our new plan will take time to achieve and will require engagement with suppliers, business partners, and customers to innovate, disrupt and influence.

While this plan scales, as a temporary measure, we are investing in credible and verifiable nature-based projects to offset our emissions, not only accounting for our current emissions but offsetting our footprint along the way.

We plan to build long-term partnerships so we can learn, while also creating a positive impact on the natural world as we invest in credible, verifiable nature-based solutions.

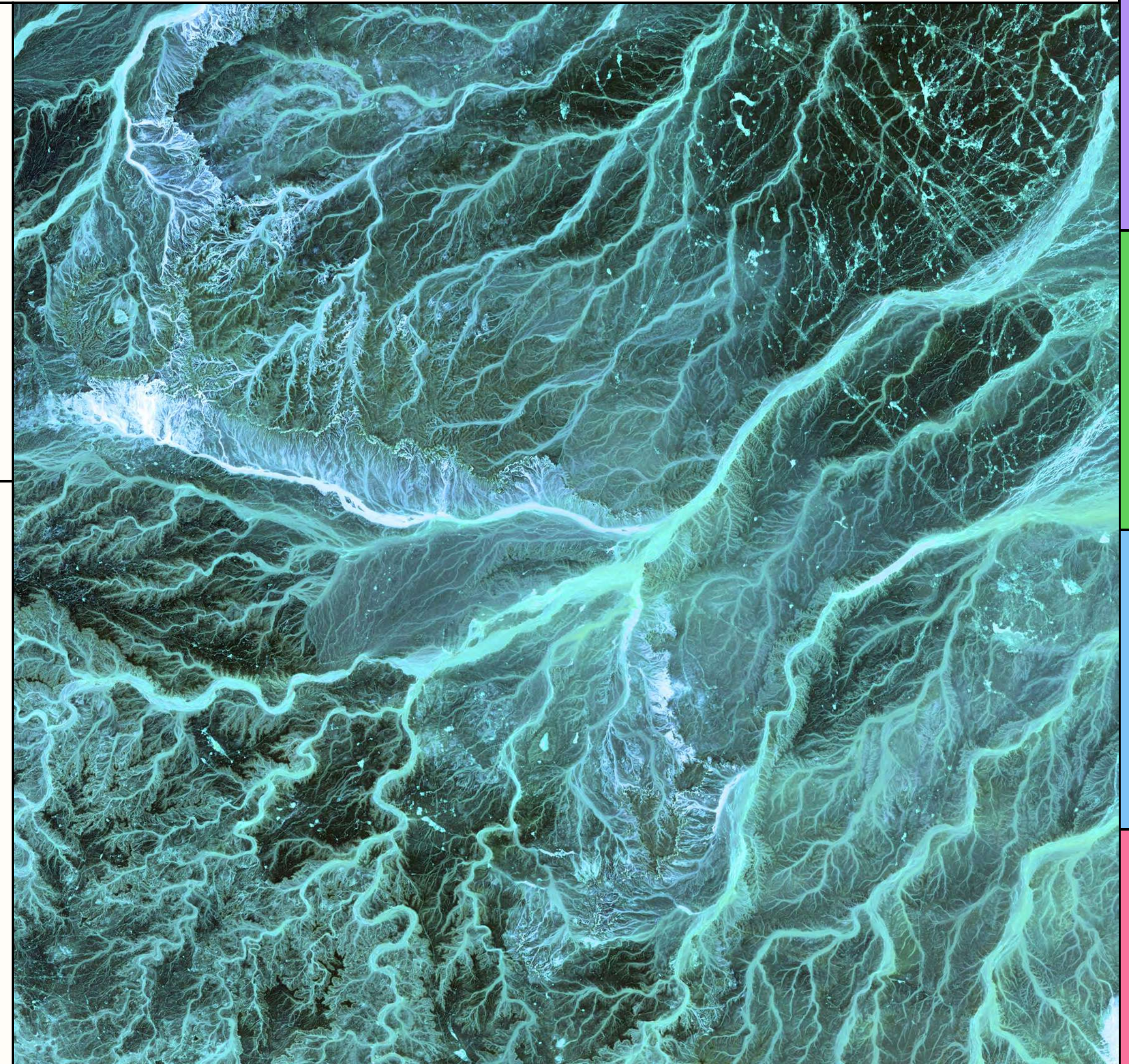


Image by PANGAIA

These are the criteria we reference when selecting carbon offsets.

## 1. No Harm

- The project does not result in any environmental damage or detrimental impact on local communities.

## 2. Co-benefiting

- Projects should support more than just GHG reduction, for example for PANGAIA this may be nature-based solutions, with elements of ecosystem and biodiversity regeneration or restoration.
- They generate a tangible and demonstrable socioeconomic benefit for local communities in which they are based.
- Benefiting 'partners' should be identifiable and specific; and engaged members of the local community.

## 3. Quantifiable

- Volume of GHG gases removed are measurable, on a frequent and regular basis (at least annually).
- Methods of quantification are well understood and scientifically aligned.

## 4. Additional

- No double counting. Project would not have occurred without specific funding, ideally with project specification and design input from purchasing company.

These are the organizations we worked with in 2021:

## 5. Verifiable

- Third party, independent assurance against an agreed verification protocol.
- Gold Standard or VPS is a good place to start.

## 6. Leakage

- The net result of the project is not an increase in emissions elsewhere in the value chain.
- The project does not lock in emissions or long-term fossil fuel consumption.

## 7. Permanent

- Emissions removal should seek to be as permanent as possible.
- The longevity of the project is carefully considered before procurement and as part of portfolio planning. Long-lived storage is preferred.
- Risk of reversal is mitigated, e.g. through a buffer mechanism and switching projects where necessary.
- Project performance is continuously monitored, following internationally recognised protocols.

- [Karadere Wind Power - Renewable Project \(Turkey\)](#)
- [Crow Lake Wind - Renewable Project \(United States\)](#)
- [Hong Phong - Solar Project \(Vietnam\)](#)
- [Southern Cardamom - Mangrove Conservation \(Cambodia\)](#)
- [Darfur Cookstoves - Social Project \(Sudan\)](#)

# Water Health

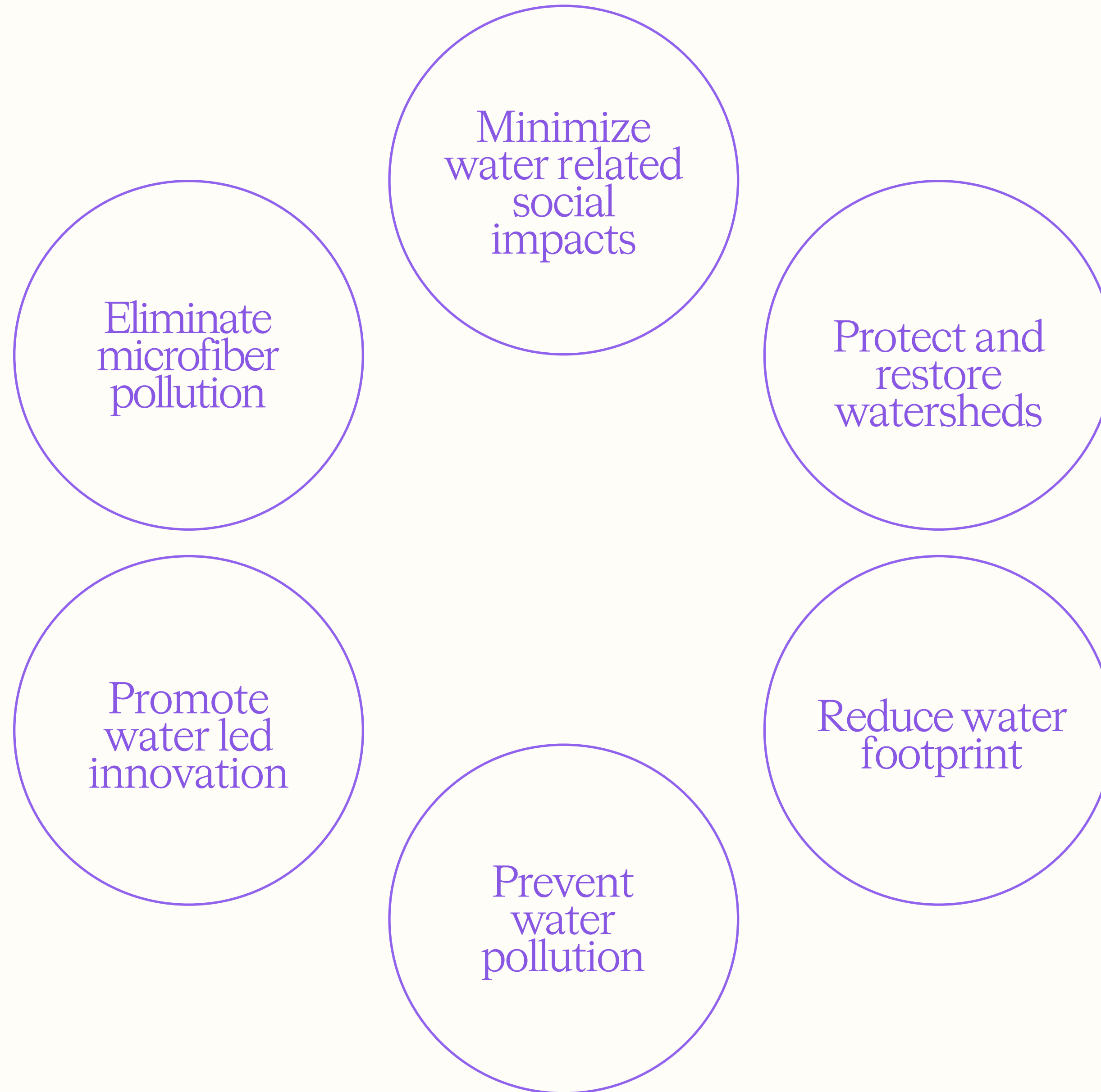
The essential element for our survival.

While the majority of our focus was on GHG emissions in 2021, we are aware that our environmental footprint is much broader than this, and over time we will hold ourselves accountable across many metrics, including our water footprint.



We have begun building our Water Stewardship program. We still have a long way to go to accurately benchmark and report on the full picture, but here is what we can share of our commitment so far.

# Our Goals



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# How is water material to PANGAIA?

Across our supply chain, we use water for material processing, dyeing, bleaching, cooling, cleaning, and printing processes. As a result, water consumption and wastewater management (treatment and discharge) is a key concern. At the raw material stage, large volumes of water are also required for the irrigation and cultivation of cotton and other natural fibers.

Although a relatively smaller footprint, the water consumed in our offices, warehouse, and manufacturing sites must also be addressed in our water stewardship efforts.

We acknowledge that water pollution and consumption also take place during the use phase of our products. This includes the regular washing of our products and associated microfiber pollution entering water bodies.

## What we've learned so far:

Preliminary benchmarking of our facilities and supply chain indicates that 99% of our water footprint ties back to the production of our apparel.

# A note on Microfiber Pollution

When textiles are manufactured, worn, washed, or discarded they shed microfibers into the air, soil and ocean. These microfibers contain chemicals that have been found at the top of Mount Everest and in the deepest oceans<sup>2</sup> as well as inside wildlife and humans<sup>3</sup>.

Studies regarding microfiber toxicity and epidemiology continue to emerge<sup>4</sup> and toxicity levels are unclear. Due to this lack of clarity, scientists urge action against microplastic and microfiber waste.

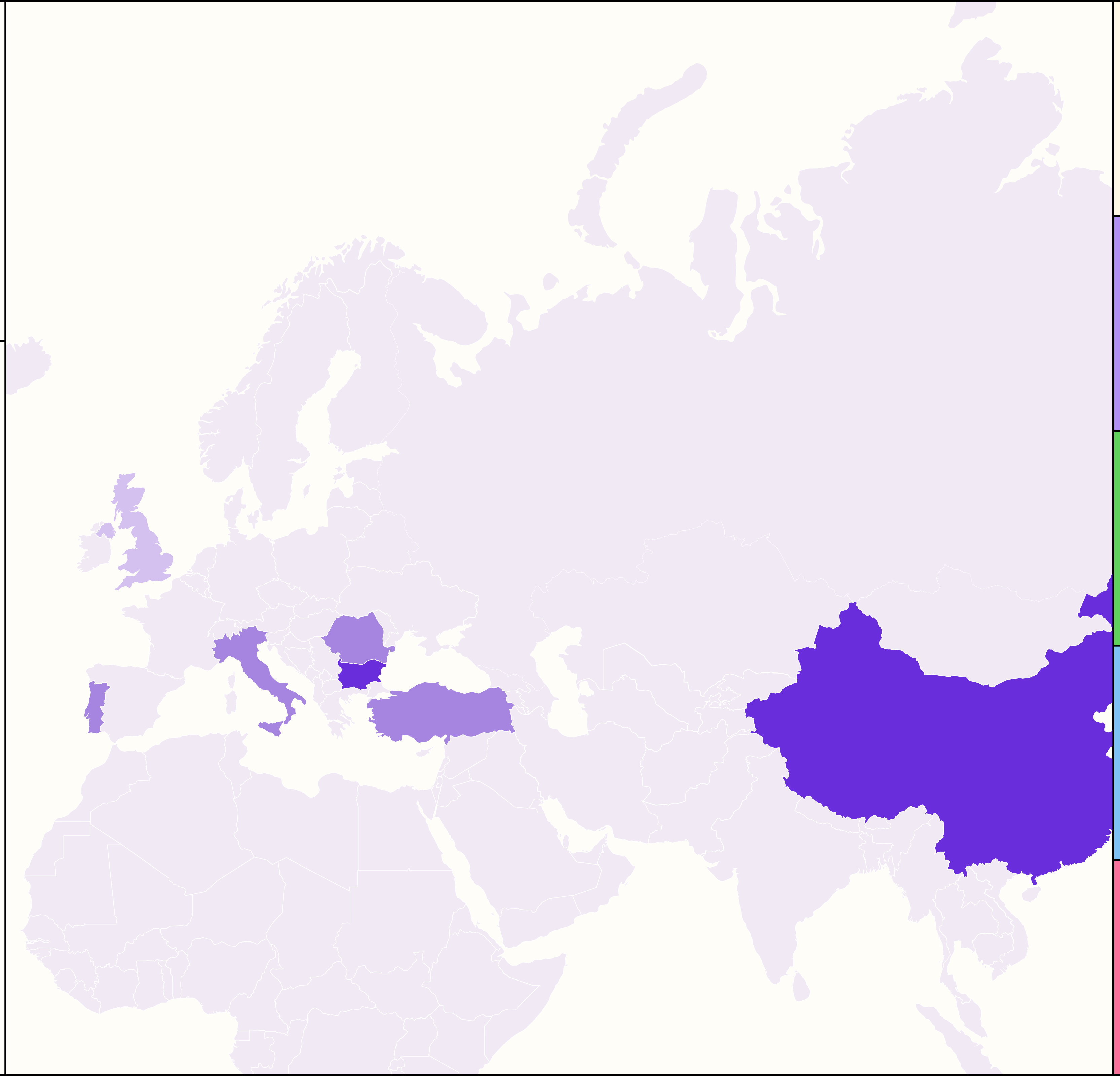
We have exciting innovations in the pipeline that addresses this very issue, and although we can't say more at this stage, we are looking forward to taking part in offering solutions that reduce microfiber release.



# Water risk

Water risk describes the possibility of an entity experiencing a water-related challenge (e.g. water scarcity, water stress, flooding, infrastructure decay, drought). We have identified the water risks associated with our main manufacturing, office, and warehouse facilities which have indicated that we are operating in regions of medium to high water stress.

- **China** (>0.5% of manufacturing): **High**
- **Portugal** (where 87% of our apparel is produced): **Medium to High**
- **UK** (no manufacturing takes place in the UK but this includes our main Warehouse & Headquarters): **Low to Medium**
- **Italy** (5% of manufacturing): **Medium to High**
- **Turkey** (3% of manufacturing): **Medium to High**
- **Romania** (1% of manufacturing): **Medium to High**
- **Bulgaria** (4% of manufacturing): **High**



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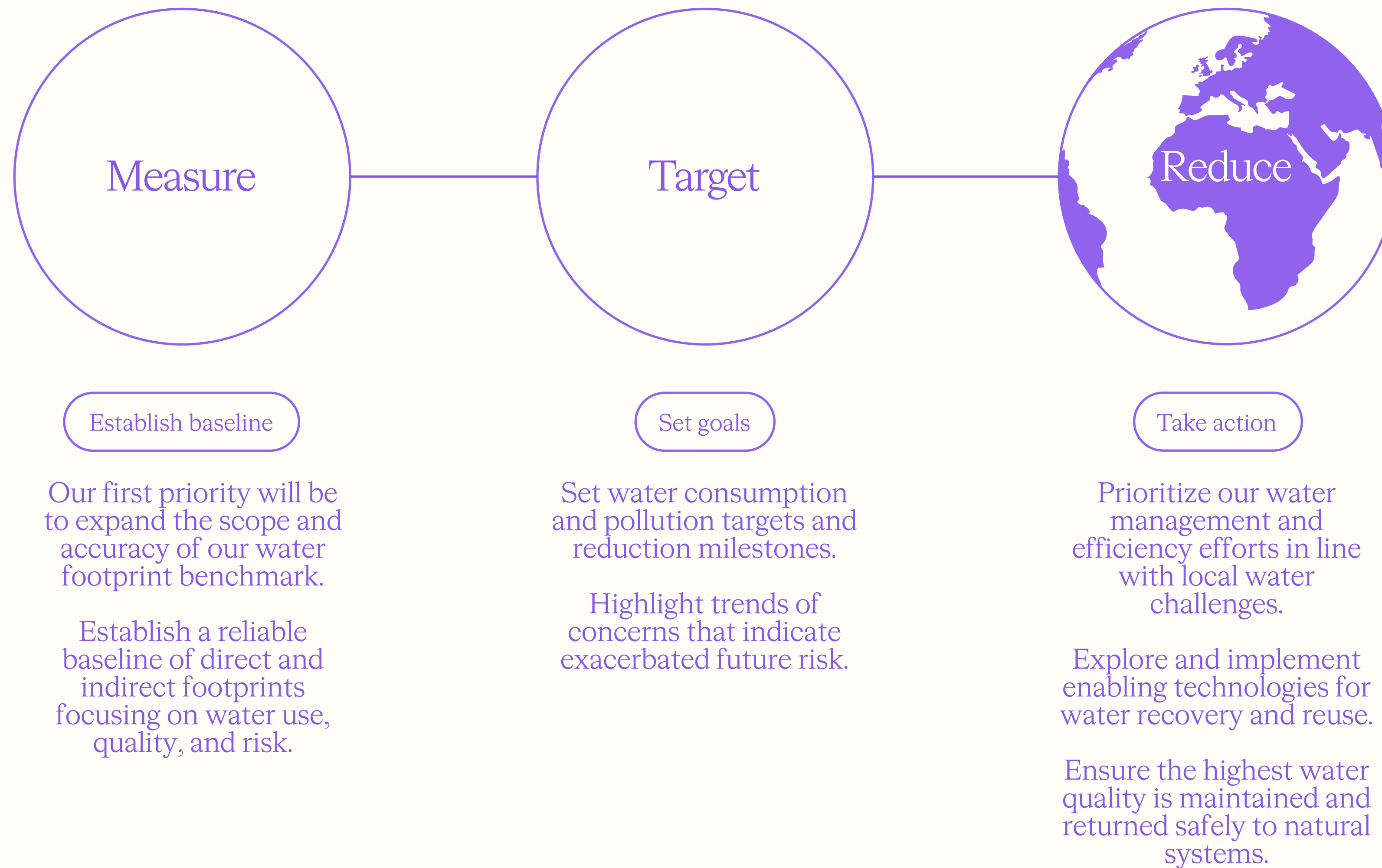
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This knowledge guides our conversations with our partners regarding their own water stewardship programs and will help us build collaborative programs across our water stewardship goals.

The Roadmap to get there:



# Biodiversity

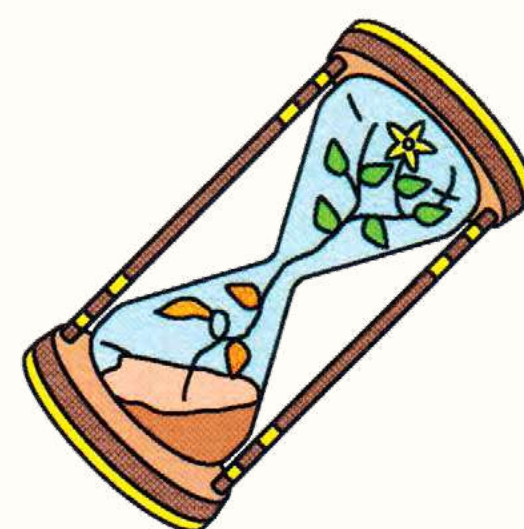
## A pledge to all living things

As we forge ahead with our climate ambitions, we recognize that biodiversity loss and climate change are inextricably linked, and we cannot deliver a comprehensive climate strategy without the inclusion of biodiversity loss mitigation. We aim to map and assess our biodiversity impacts, define how we can improve sourcing strategies to reduce impact, and deliver positive outcomes at field level (Tier 5, including harvesting of raw materials like cotton).

## What do we mean by biodiversity?<sup>5</sup>

Biodiversity is all the different kinds of life you will find in an area—the variety of animals, plants, fungi, and even microorganisms like bacteria that make up our natural world. Each of these species and organisms work together in ecosystems, like an intricate web, to maintain balance and support life. Biodiversity supports everything in nature that we need to survive: food, clean water, medicine, and shelter<sup>6</sup>.

We are committed to engaging wholly with the natural systems that we depend on and aim to contribute to the health and prosperity of these ecosystems.



## How we are thinking about biodiversity

- Embrace organic and regenerative practices.
- Actively restore ecosystems, and protect wildlife and local habitats.
- Ensure animal welfare standards are respected.
- Support soil health.
- Conscious land use and forest management moving away from irresponsible conversion.

You can read more about our ongoing support for grassroots NGOs working in biodiversity conservation through the Tomorrow Tree and Bee the Change Funds in the Giving Back chapter.

Within our Innovative Materials & Systems chapter, we also outline the regenerative projects that we are engaged with as part of our efforts to address biodiversity loss within our cellulosic (cotton) supply chain.

# Key progress markers

- Upgraded our Environmental Management System (EMS).
- Measured and quantified GHG emissions across scope 1-3.
- Developed our decarbonization roadmap in line with science-based targets.
- Started mapping our water footprint, evaluating water risk, and building our Water Stewardship program.
- Started collecting biodiversity data to inform our biodiversity strategy.
- Ensured that all our retail pop-ups were carbon neutral.

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# Going forward

2021 was driven by climate science, and focusing our attention on our biggest GHG emissions footprint. We spent a lot of time gathering data for our baseline year and laying the right foundations to help us reach our goals. 2022 will be focused on execution and tangibly get us closer to Earth Positivity across all 3 planetary pillars.

## Climate Action

Our decarbonization roadmap kicks into action! Remember, we have made an ambitious goal to reach net zero by 2040, which is 10 years earlier than the industry standard.

## Water Health

We will further develop our Water Stewardship program and expand the scope of our water footprint measurement.

## Biodiversity

We will dive deeper into how we can implement biodiversity solutions within our supply chain and continue to raise awareness of the importance of biodiversity protection on a global scale.

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# Our Responsibility: The PANGAIA ecosystem

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GIVING BACK



People are the foundation of PANGAIA, it is even in our name. PAN: All-inclusive, GAIA: Mother Earth equates to ‘one heart, many hands’, all working together to realize our ambitions from ideas to solutions.

PANGAIA’s people are the individuals that make up our teams and the partners across our value chain, from farmers, mills, and manufacturers, to our creative partners and logistic providers.

We recognize that true environmentalism is intersectional and that people and the planet are intrinsically linked. Within this, we acknowledge the injustices that exist within our societies and that some communities are disproportionately affected when facing socio-economical and environmental crises.

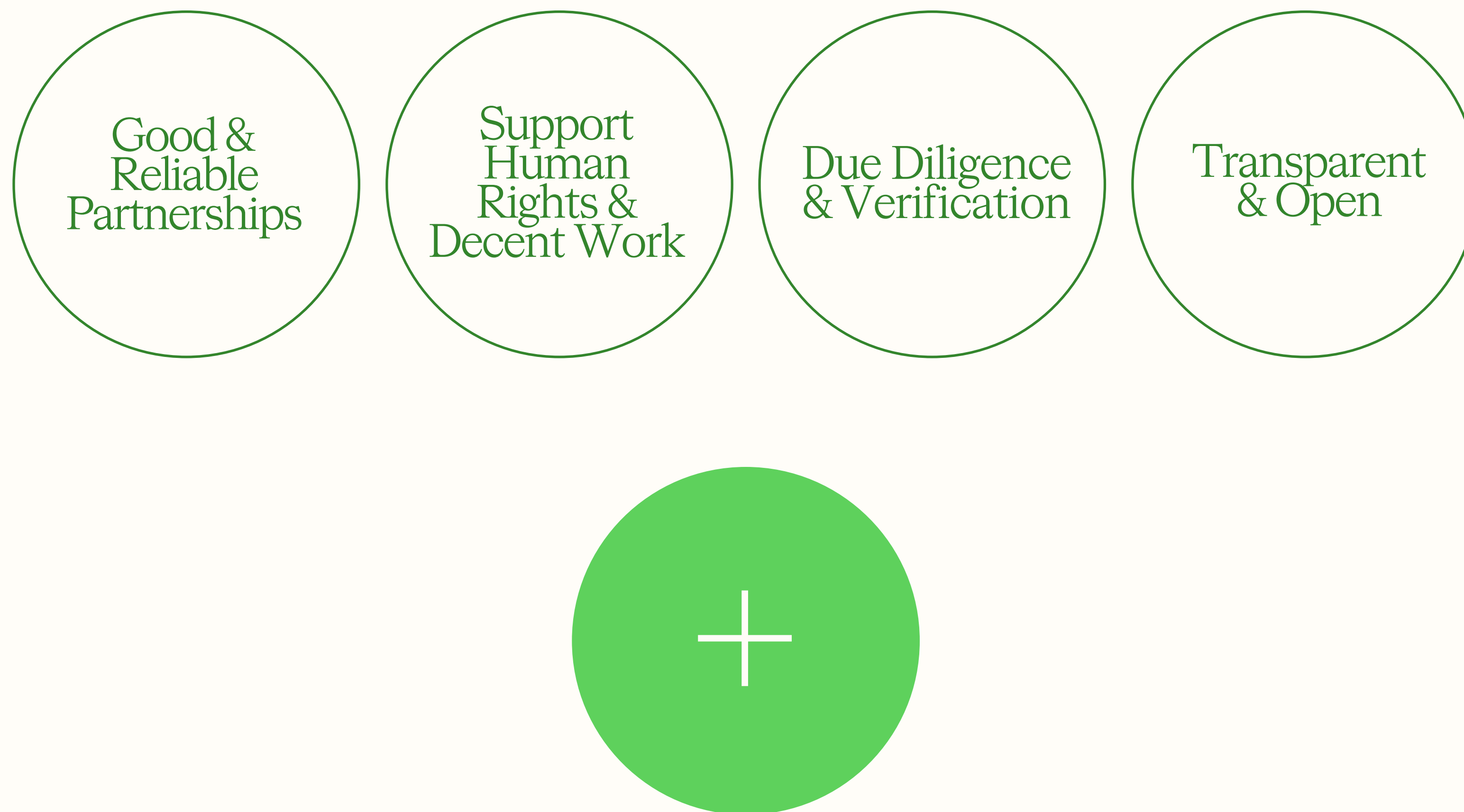
Our mission to build an Earth Positive business means exactly this: giving back to the planet more than we take. When it comes to people, this philosophy is grounded in a commitment to elevate human potential.



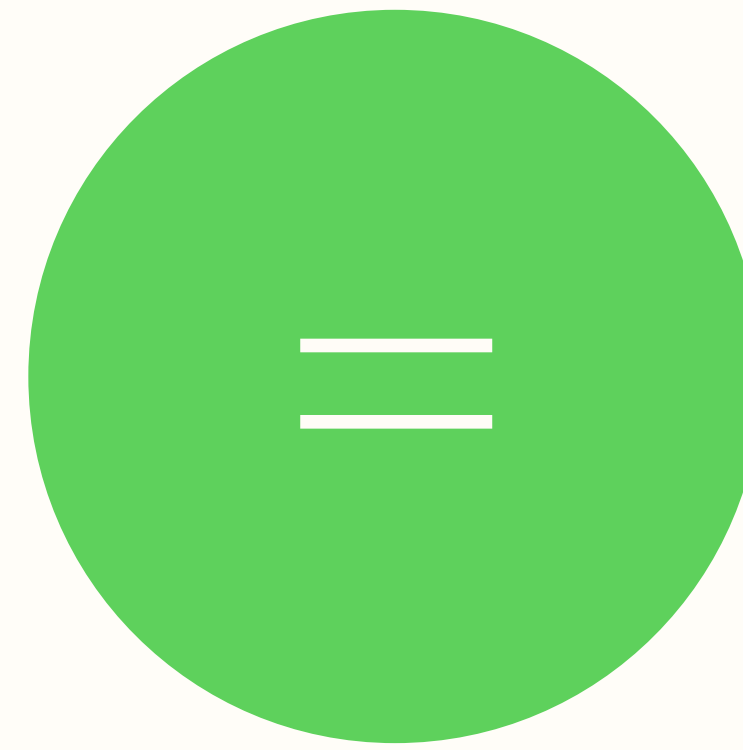
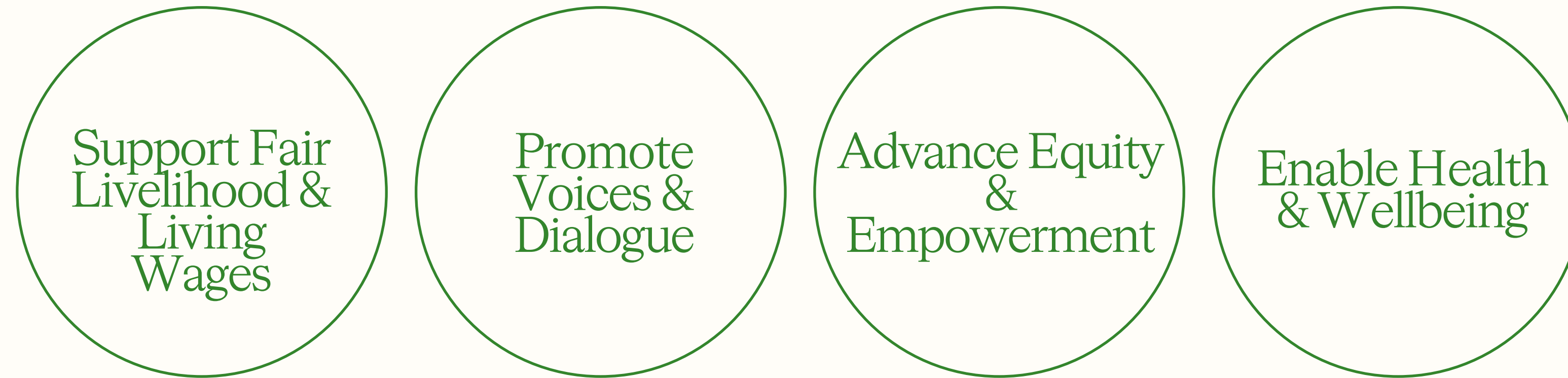
Image by Erius, Valerius

# Our blueprint for Earth Positivity

Acting as an ethical business



# Positively impacting lives



Earth Positive

We have four principles that form the cornerstones of our ethical business relationships, within PANGAIA and beyond:

- Good & Reliable Partnerships
- Support Human Rights & Decent Work
- Due Diligence & Verification
- Transparent & Open

Our focus for the moment has been to embed ethical business principles into the way we work, and we will continue to build on this year on year. This report outlines the key milestones we reached last year. Even though we are making progress, we still have plenty of work to undertake on this front.

# PANGAIA Supply Chain Partners

Our **value chain** is made up of the partners that span the entire life cycle of our product and those that service the experience of our brand, from the cultivation of materials and the manufacturing of our products to distribution and marketing.

Our approach to ethical business and positively impacting lives applies to every person within our value chain. However, we also recognize that the biggest human rights risks are found within the part of the value chain that makes our product: the **supply chain**. Acknowledging the historic and systemic injustices that exist within our industry inform the actions we take day to day. This is why we prioritize our time and effort in investigating and responding to prevent or remedy social risks and challenges in the supply chain.



We prioritized three key things in 2021:

1

Map where our products are made.

2

Understand the needs of people who make our products and create plans for how we can support their needs.

3

Establish social health guardrails and due diligence.

Guided by our vision to elevate human potential,  
here are the actions we have taken so far:



Image by Meamstyle

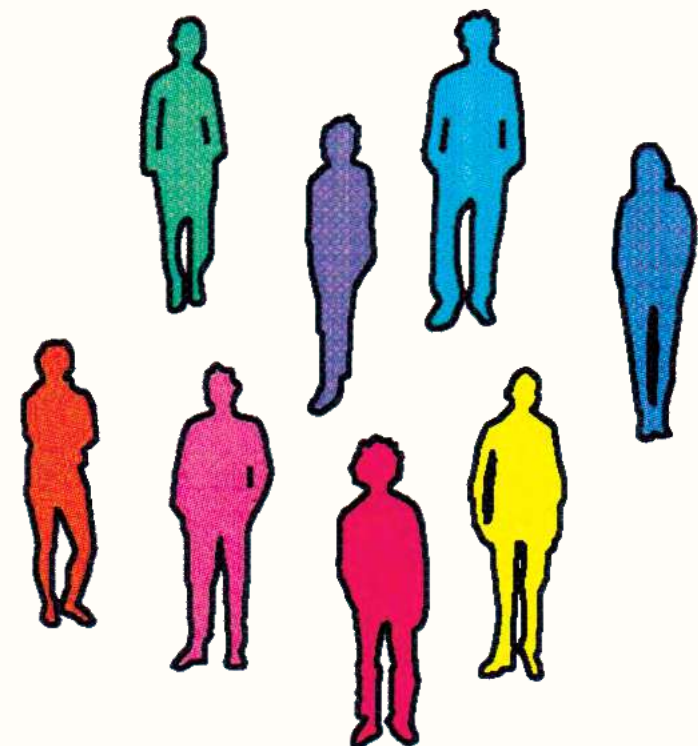
## Good & Reliable Partnerships

Our strategy for establishing supply chain partnerships in our first two years of operation has been to partner with a small number of suppliers who share our values of being collaborative, progressive, and accountable. We strive to go beyond the basic compliance standards and build on those outlined in our Code of Conduct. Our expectation is that all our supply chain partners provide safe working conditions, treat workers with respect, and conduct business in a fair manner.

We hope to build honest and long-lasting partnerships with suppliers. This has been especially important throughout the pandemic. Our close connections with our partners have been maintained with frequent contact and the ability to visit in person where allowed.

18 factories across

- Portugal
- Italy
- Turkey
- Romania
- China
- Bulgaria



## Support Human Rights & Decent Work

Commitment to the protection and respect for all human rights and social wellbeing is enshrined in our internal values and practices as well as our external partner expectations. The cornerstone of our commitments to human rights is found in our Code of Conduct, which covers labor rights, safe working conditions, wages, discrimination, as well as how we monitor and remediate social issues.

Let's take a closer look into our values and Code of Conduct

### 1. Employment is freely chosen

- Nobody should be forced to work or enslaved. Sadly this is a reality in the fashion industry so we want to make sure jobs are decent and people have freedom!

### 2. Freedom of association + collective bargaining are respected

- This means that workers have the ability to speak up and have their say. They can also be part of unions or committees to join together and make collective improvements.

### 3. Working conditions are safe + hygienic

- Workplaces should be safe for everyone to be in, which means everything from bathrooms being clean to having trained first aiders. It is so important people are safe and their well-being is valued, including having proper fire protection, PPE, safe buildings, and machinery.

### 4. Child labour is not used + young workers are protected

- Children should enjoy a childhood and be in school, not forced to work. No child should ever be making our products, and any young workers should receive extra support.

### 5. Living wages are paid

- Low pay is notorious in the fashion industry. Every person should at least receive the legal minimum wage, ideally a living wage.

### 6. Working hours are not excessive

- Long shifts are a problem in the fashion industry which get longer because of quick turnarounds and sudden design changes. Everyone should be entitled to a work and life

balance with proper time to rest.

#### 7. Regular employment is provided

- We know how important a steady job is and that people should understand their rights at work. This means having workers employed on a proper contract with all the right documentation and benefits.

#### 8. No discrimination is practiced

- Fairness and equality is crucial to ensure that each person can be treated in a dignified and respected manner.

#### 9. No harsh or inhumane treatment is allowed

- Simple – no abuse or disrespect (physically, sexually or mentally) to anyone.

#### 10. Environmental protection

- Protecting our planet and the natural resources is important and we want everyone to share that responsibility. Fashion is known to be a big polluter but we want that to change!

#### 11. Responsible material sourcing

- Finding out the origins of the materials used in a product is just as important as where they are put together. The over extraction of natural resources is detrimental to our planet so it is vital to monitor what resources are used and how much, to understand our impact.

#### 12. Responsible chemical management

- From dyeing to printing the fashion industry uses many chemicals in the wet processes that are used to make products. These can negatively impact our water systems and be detrimental to people's safety as well as polluting to the planet.

#### 13. Animal welfare

- We use animal based products like wool and cashmere so animals need to be treated with care and free from pain or distress. We also

ban the use of certain materials as they just aren't ethical.

#### 14. Business integrity, transparency + remedy

- Corruption and bribery can be rife however we believe in fair business. Openness, honesty and transparency is crucial!

Labor rights ensure that the people employed in our supply chain are treated with dignity and have decent work<sup>1</sup>. These rights ensure that people are free to choose work, that their hours are not excessive and that they have the freedom to unite together and bargain for improvements. For PANGAIA, the respect and protection of these rights is crucial for us and our business. We strive for full transparency of the conditions across our value chain and put due diligence processes, and where needed remediation, in place.

### Highlights

1. We advocate for freedom of association, where workers can collectively influence their working conditions and terms of employment. Audits have concluded that in our Tier 1 factories, 75% of our factories have some form of formal representation (either worker committees or elected representatives), and 58% have an active **collective bargaining** agreement. Over time, we will work on a roadmap that enables all workers to have access to representation or a channel to raise their voices.

2. We support diversity, equity, and inclusion within every aspect of our business. Within our supply chain, 62% of workers identify as female and we have started monitoring the proportion of women within management roles. We believe there is more work to be done and will be developing a strategy so that we can col-

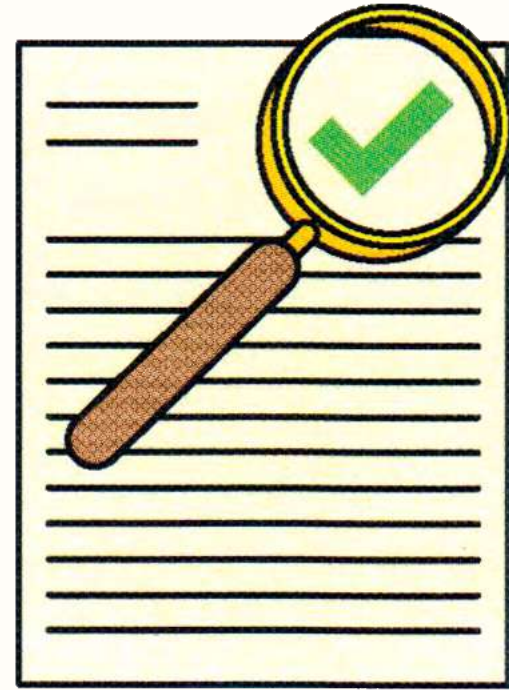
laborate with all our partners to emphasize the importance of a more diverse and equal society and ensure people feel empowered.

3. Ensuring that wages are not only legal but fair and either reflect the true living costs or are on the way to a living wage is a difficult task, especially further down the supply chain and in more informal employment arrangements. We are combining greater transparency with our verification methods to understand the state of worker pay so we can progress towards fairer wages. For PANGAIA, this means ensuring we are a responsible buyer as well as creating a roadmap to understand and progress wages where we can positively impact our supply chain. Our next actionable steps include adopting a living wage methodology and assessing living wage benchmarks in regions we operate in to comprehensively understand our wage landscape.

We're proud of this:

We published PANGAIA's first Modern Slavery Statement.

# Due Diligence & Verification



In 2021, we introduced a **Vendor Manual** and a formal vendor onboarding process. The manual includes our Code of Conduct, which is based on internationally agreed principles in the UN Charters, International Labour Organization's Core Conventions, and is aligned with the ETI Base Code and **Fair Labor Association** standards. Compliance is monitored by site visits and through **third-party audits**. We enlisted Intertek, a quality assurance auditor, to assess PANGAIA processes in comparison with industry standards. We have also established an internal escalation process in the event of non-compliances or of a zero-tolerance incident.

## A note on Zero Tolerance

We have a zero tolerance approach to certain issues which we believe contravene the most basic of human rights and unethical practices. These issues include modern slavery of any form (including forced or bonded labor), child labor, abusive harassment,

the risk to life or limb, the non-payment or payment under the legal minimum of wages, extreme environmental degradation, and bribery or corruption.

While we are not naive to these practices existing in the fashion industry, we believe in having a strong stance that we shall not tolerate this type of exploitation if uncovered in our supply chain. We are developing tailored escalation and remediation processes and will be conducting PANGAIA-wide training on these topics to ensure our teams are well-equipped to adequately respond to such violations.

## Audit methodology

Auditing across the supply chain is a way of ensuring suppliers are complying with ethical standards and fair labor practices as defined by our **Code of Conduct**. They are a useful tool in gaining insight into our suppliers' practices and potential risks in our supply chain – especially when we begin to work with a new partner. Annually requesting audits gives PANGAIA the opportunity to track progress through the years and to find out where there is still some work to do. Audits increase transparency and encourage PANGAIA to be accountable for the conditions in our supply chain. Once an audit is received, we review the report and assign a grading based on any non-compliances that have been found and the severity of these issues. To ensure we have consistency across our supply chain we have standardized our grading.

Introduced in 2021, all PANGAIA production sites (Tier 1) are required to have third-party social audits on an annual basis to ensure **ethical trading** and fair labor standards are met, as outlined in our Code of Conduct. We received third-party audits for 63% of our Tier 1 manufacturing sites, and we are working towards having 100% coverage of audits.

## A note on our geographical expansion

As our business has grown, we have expanded our supplier network. When sourcing from new regions, the Impact Team works with the Production, Product Development, Sourcing, Research & Development (R&D), and Partnerships teams before selecting suppliers. In addition to individual supplier vetting, we also assess conditions at a country level to understand the cultural, social, environmental, and economic context of working within any given country.

We want to ensure that every person who is interacting with our supply chain has the opportunity to engage with and understand social risks and issues that could exist. The Impact Team has organized a number of internal training sessions to deep dive into relevant topics. For example, we hosted living wage training for almost a third of PANGAIA employees to understand the context of wages in the garment industry, what a living wage is, and how important it is to strive towards. These training sessions are one way we are embedding responsible practices across our teams and helping create a common mindset that champions ethical

**We're proud of this:**

**We visited 81% of our tier 1 factories last year (see below for what we mean by Tier 1!).**



# What our audits tell us

Metric	KPI	FY20	FY21
Number of suppliers	Number of Tier 1 suppliers	13	18
Social compliance	% Tier 1 factories with social audit	0%	63%
	% Audit conducted by third-party auditor	0%	63%
	% Unannounced audits	Unknown	5%
	% Semi-announced audits	Unknown	37%
	% Fully announced audits	Unknown	16%
Worker overview	Total number of workers in Tier 1 factories	Unknown	1807
	% Female workers	Unknown	62%
	% Male workers	Unknown	38%
Worker representation	% Factories with formal worker representation (either worker committee or union)	Unknown	75%
	% Factories with an active collective bargaining agreement in place	Unknown	58%

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# Transparent & Open

Supply chains are a complex web of relationships, and we face the same obstacles as other companies operating in the global and fragmented fashion industry: visibility and transparency.

It is easy to see how traceability and transparency have become a problem in the industry, where each product element has its own supply chain with a different combination of individuals and companies across different countries. It gets very complicated, very quickly.

We are taking steps to share our supply chain and be honest about our impact.

Transparency and traceability are a key focus for us. Our priority in 2021 was to assess business practices across our supply chain, so we conducted a traceability assessment of our direct-to-consumer (DTC) products.

We have signed the **Transparency Pledge**: a commitment to publish details of our supply chain manufacturers in Tier 1 and Tier 2. We also contributed data to the Open Apparel Registry, which we see as a vital

route to improving facility transparency and brand accountability in the industry.

A note on our Supply Chain Tiers: Our supply chain is divided into tiers 0 to 5, which represent general production processes moving from raw ingredients to a finished product.

- Tier 0 - Fully mapped
- Tier 1 - Fully mapped
- Tier 2 - Partially mapped
- Tier 3 - Partially mapped
- Tier 4 - Not yet mapped, some oversight
- Tier 5 - Not yet mapped, some oversight

Tier Name	Tier Description	Facility/Process Example
Tier 0: Office, Retail & Distribution Centre	Distribution, retailing, offices, research.	Warehouse, stores, offices, research centers.
Tier 1: Finished Product	Factory which cuts, sews and finishes product and ships to PANGAIA.	Stitching, assembly, quality control, packing, approved CMT subcontractors (indirect relationships).
Tier 2: Material Processes or Product Enhancements	Provider of one or more processes to materials or enhancements to the product.	Printer, dye house, fabric treatment, electroplating, laundry/wash house, embroiderer, pleating, tooling, cutting, lasering, embossing, embellishment, quilting, firing.
Tier 3: Material Production and Component Supplier	Material manufacturing and processing, and component production.	Mill (spinning, knitting, weaving), tannery, hardware, components, trims, moulding (shoe soles), labels, packaging, casting.
Tier 4: Fibre Processing	Processor of raw fibres or ingredients or feedstock.	Fiber producer, refiner, ginner, recycling/sorting center, smelting, refiners.
Tier 5: Raw Fibre, Ingredients of Feedstock source	Origin of raw fibres, ingredients of feedstock.	Cultivation (farm, forest, mine oil field), recycling collection.

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For PANGAIA, our Tier 1 facilities (see definitions above) are located in 6 key countries, in order of volume importance: Portugal (where 87% of our collection is produced), Italy (5%), Bulgaria (4%), Turkey (3%), Romania (1%) and China (<0.5%, water bottles only). From our initial visits, we found that our Tier 2 processing facilities are found close to key Tier 1 sites and are therefore in the same countries. We have a strong buying relationship with our key mills in Portugal and Italy and will be undergoing a process to map more mills connected with our production and better monitor working conditions and environmental practices.

We are committed to knowing our partners throughout every stage of our supply chain, but visibility decreases as we dive deeper into the tiers.

Getting visibility to the cultivation and raw material stage of our supply chain (known as Tier 5) is notoriously difficult, but we are progressing on this front. For some of our raw materials, we directly purchase from cultivators. We have close relationships with these producers, and where feasible, a member of the PANGAIA team has visited the sites to understand their practices and innovations. From our connections further down the supply chain, we are improving our understanding of the context and needs of the communities around our supply base.

Practices such as wild harvesting or waste picking is usually a form of informal employment, which gives people from disadvantaged communities a supplementary income to support themselves and their families. While this is a positive stream of income to support livelihoods, the risks and impacts on the people working in these communities are not fully understood. We aim to dedicate more time and resources to understanding and supporting these communities so we can be confident we are positively impacting their quality of life through decent work.

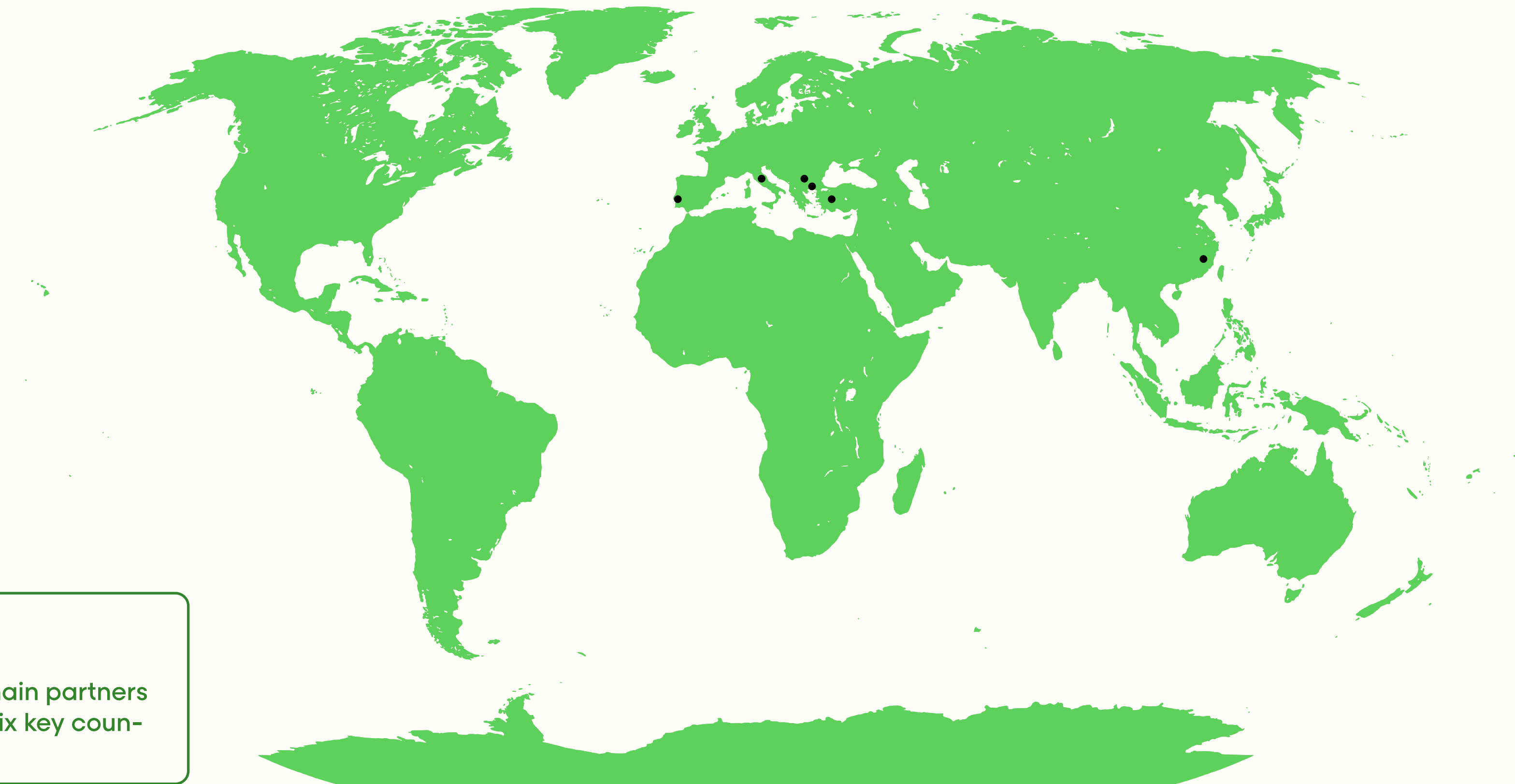
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We're proud of this:

Mapped our Tier 1 supply chain partners determining production in six key countries.

# Key progress markers

- Developed operating principles for ethical business relationships.
- Mapped our Tier 1 supply chain with partial mapping across Tiers 2, 3 and 5.
- Introduced annual third-party social audits for Tier 1 factories with 63% coverage.
- Published our Modern Slavery Statement.
- Introduced a Vendor Manual and formal vendor onboarding process.
- Established an internal escalation process for non-compliance issues.
- Visited 81% of our Tier 1 factories.
- Signed the Transparency Pledge and contributed to the Open Apparel Registry.

# Going Forward

We are committed to elevating human potential throughout our value chain within the next 3 years...and beyond! Our focus will prioritize the following areas:

## Living Wage

One of the key focus themes for us will be wages and livelihoods. We will be developing a living wage and living income roadmap in 2022.

## Transparency

We are committed to building on the work we have already carried out by broadening and deepening our visibility into our supply chain by mapping beyond Tier 1 to include Tier 2 processing facilities and Tier 3 mills connected with our production. We will also work to obtain the highest levels of accuracy possible and fill gaps in mapping.

## Standards & Due Diligence

Broaden our policies and practices to ensure better monitoring of working conditions and environmental practices. These will include the development of policies that cover non-standard employment and specific demographics such as migrant workers.



## Partnerships

We want to collaborate more widely with human rights advocates and workers' rights stakeholders to learn from the incredible expertise within their respective fields. We would like to find collaborative partners to support on the ground programmatic responses and invest in projects that have a positive impact on the welfare and lives of those people touched by our supply chain or the apparel industry.

## Capacity building

This describes the actions we will take to develop the skills, abilities, processes, and resources that our partners need to progress towards the best ethical and social practices. This will start to be rolled out in 2022 and will follow industry guidance to elevate good work to benefit workers.

## Community investment

Our future ambition is to closely knit together our business relationships with investment into the local communities around where our suppliers are based. We aim to positively impact the surrounding areas along with the families of the workers who produce PANGAIA. Once this approach is developed, we will share our plans and progress.

# PANGAIA team

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## Our Responsibility: Elevating team potential

At PANGAIA, we are a global collective of individuals bound by a common desire to use business as a force for good. The progress towards our Earth Positive mission is a testament to the people who bring unique creative and cultural perspectives, and skills to our community.

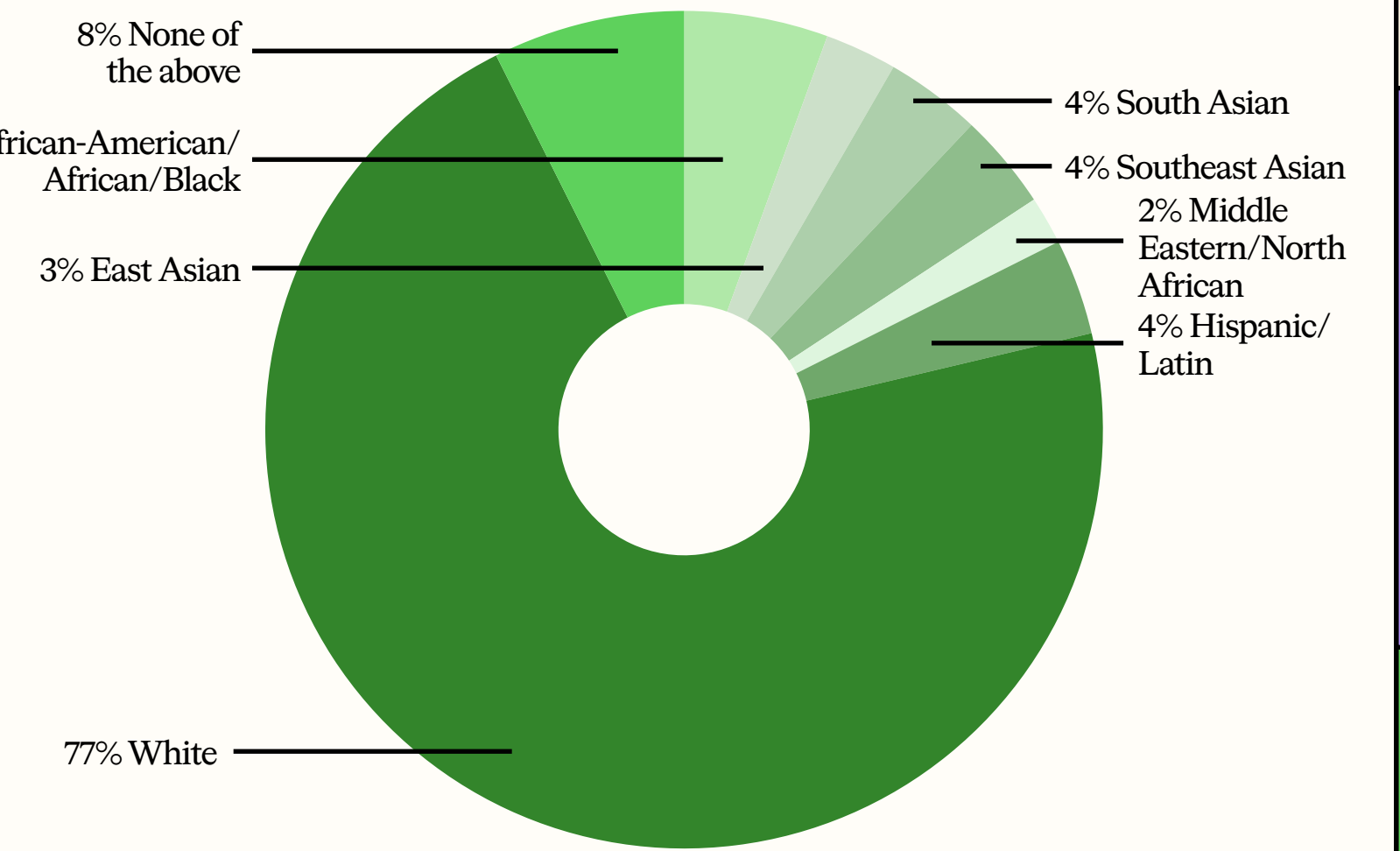
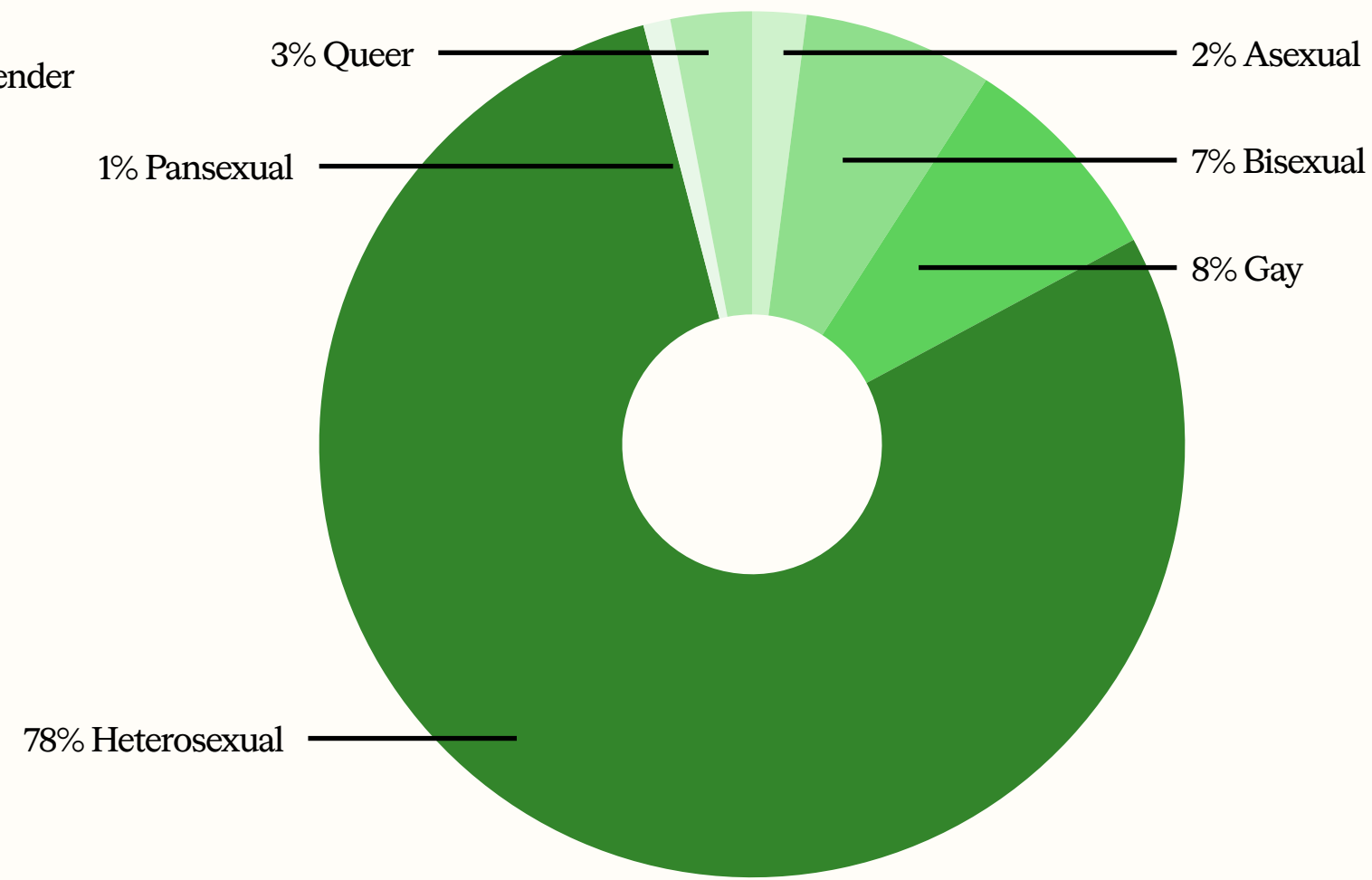
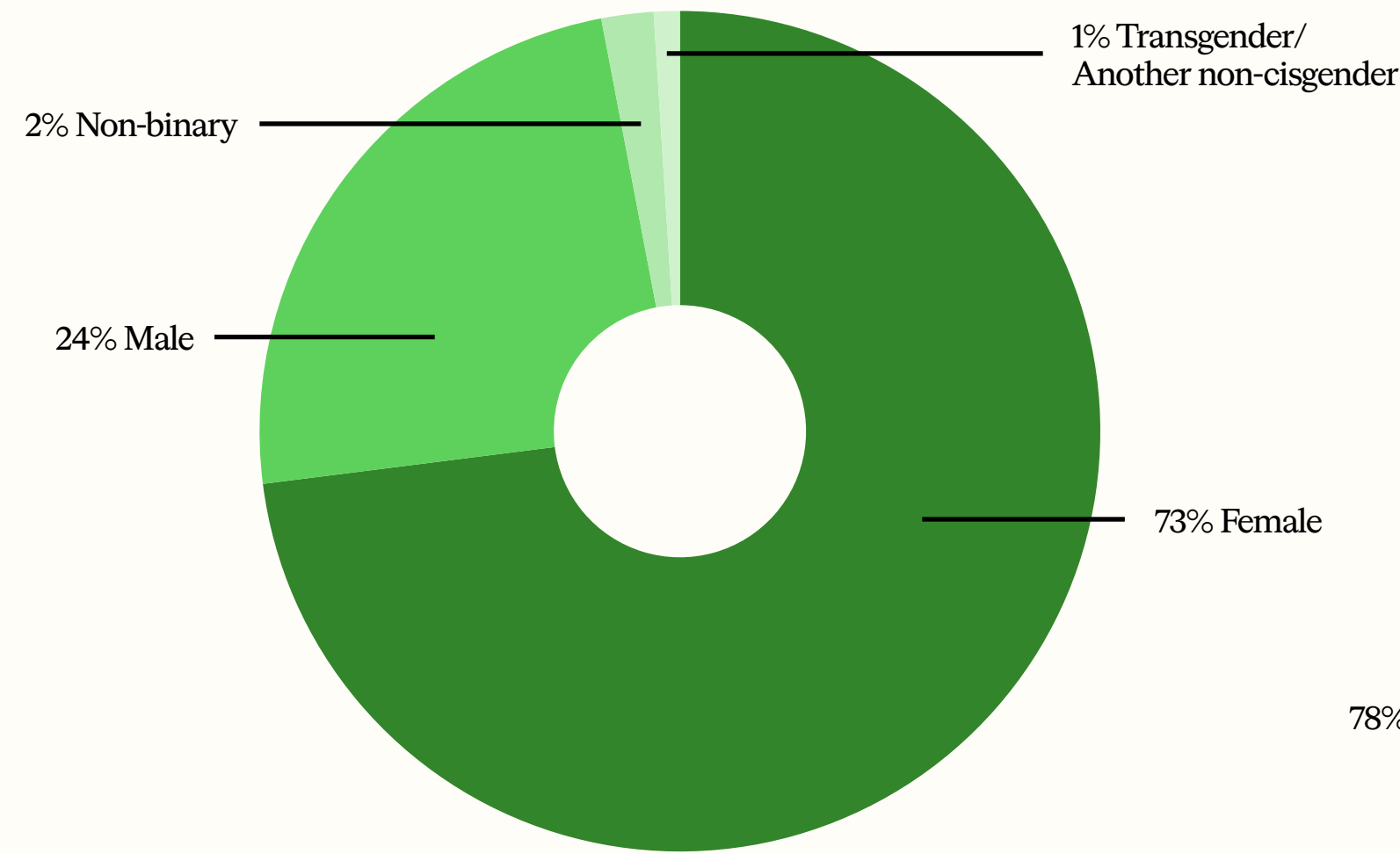
In 2021, we grew from 84 colleagues to 143. Read on to find out who makes up our global team. As we grow, we are reflecting on our practices and ways to welcome a more diverse team, build a more inclusive culture, improve the employee experience and continue to facilitate a supportive environment where people are encouraged to reach their full potential. We appreciate that we can do better and look forward to sharing our updates with you as we go.

We're proud of this:

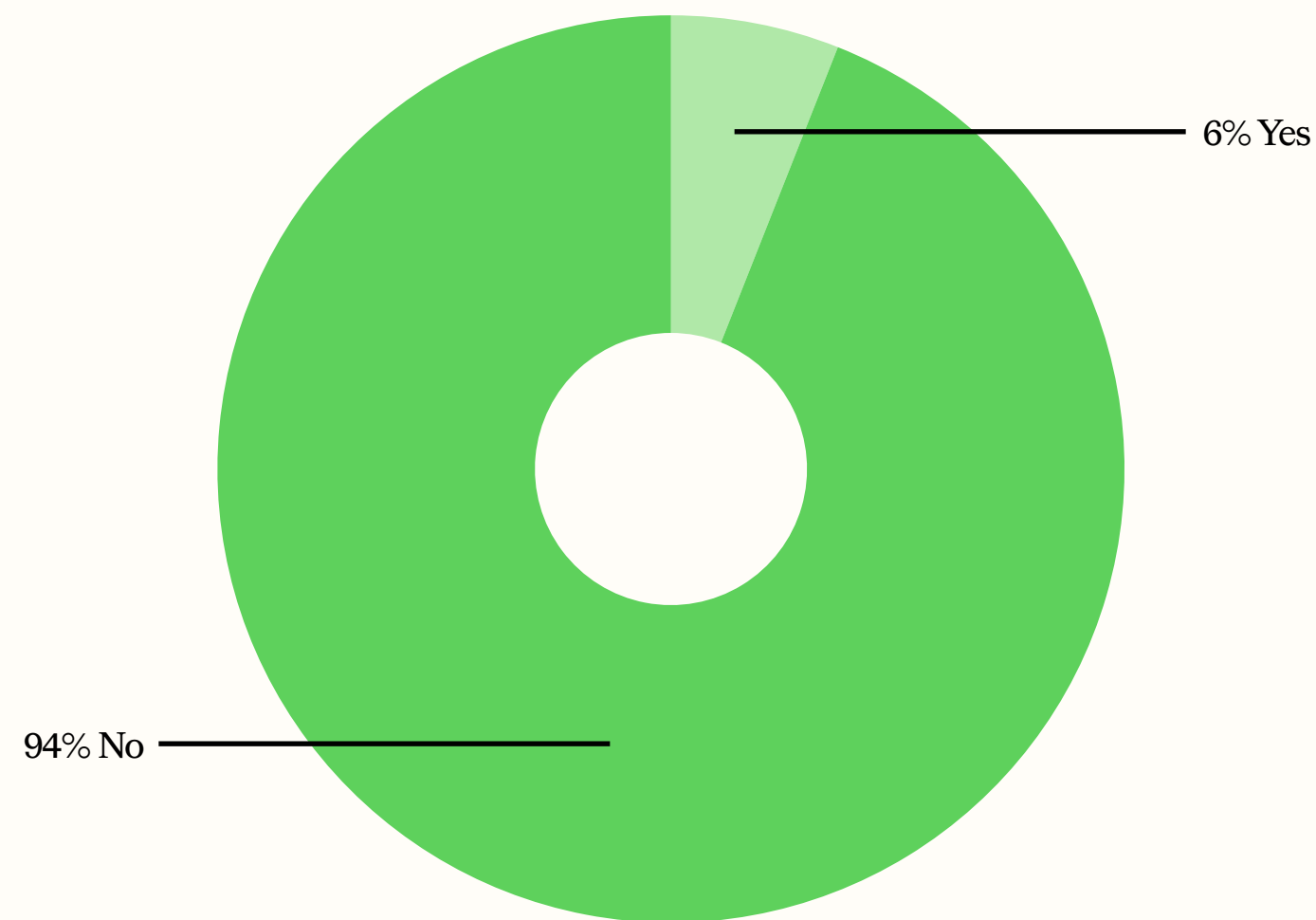
Our team is made up of over 20 nationalities, speaking over 30 languages.

# This is who makes up PANGAIA:

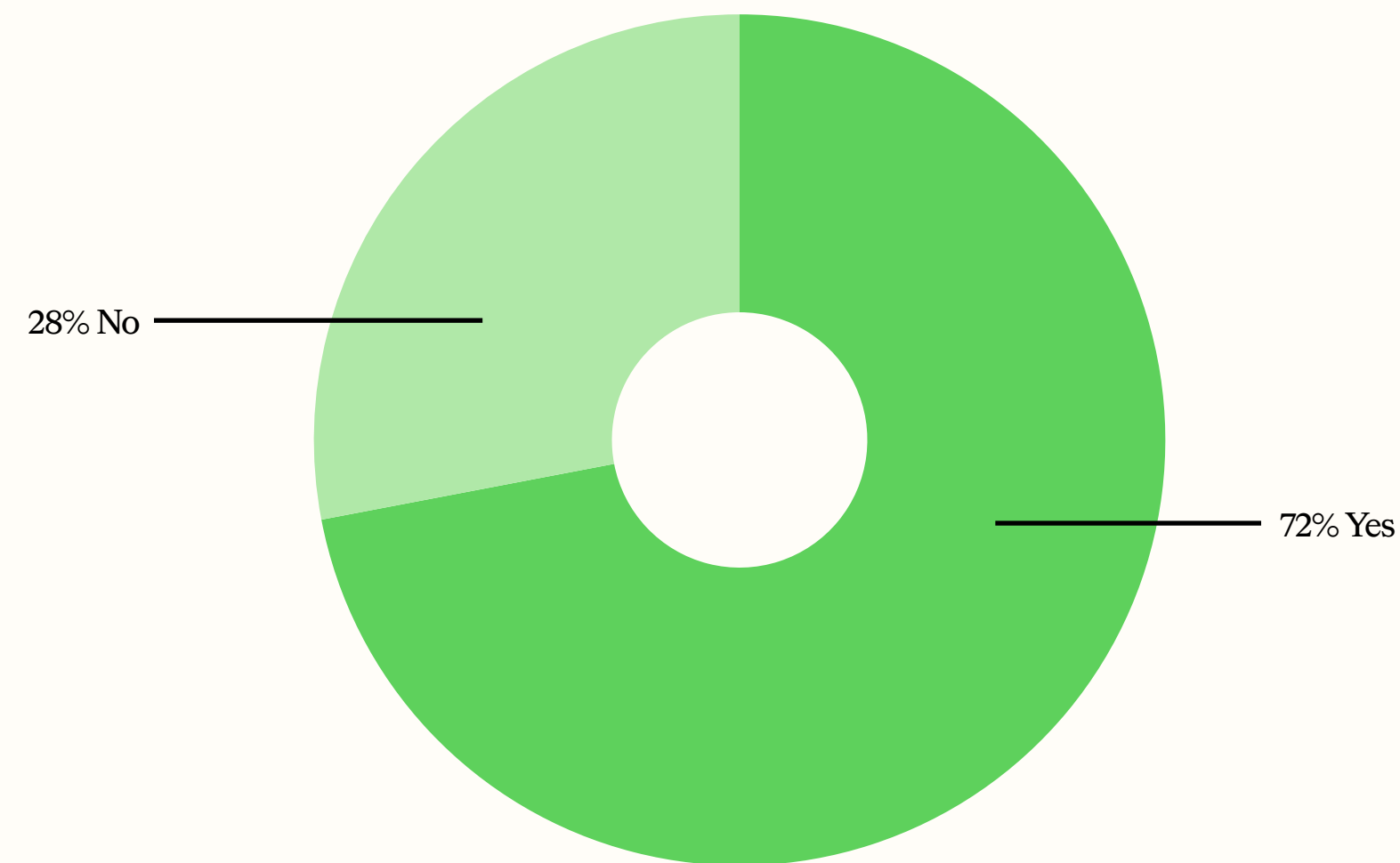
105 respondents



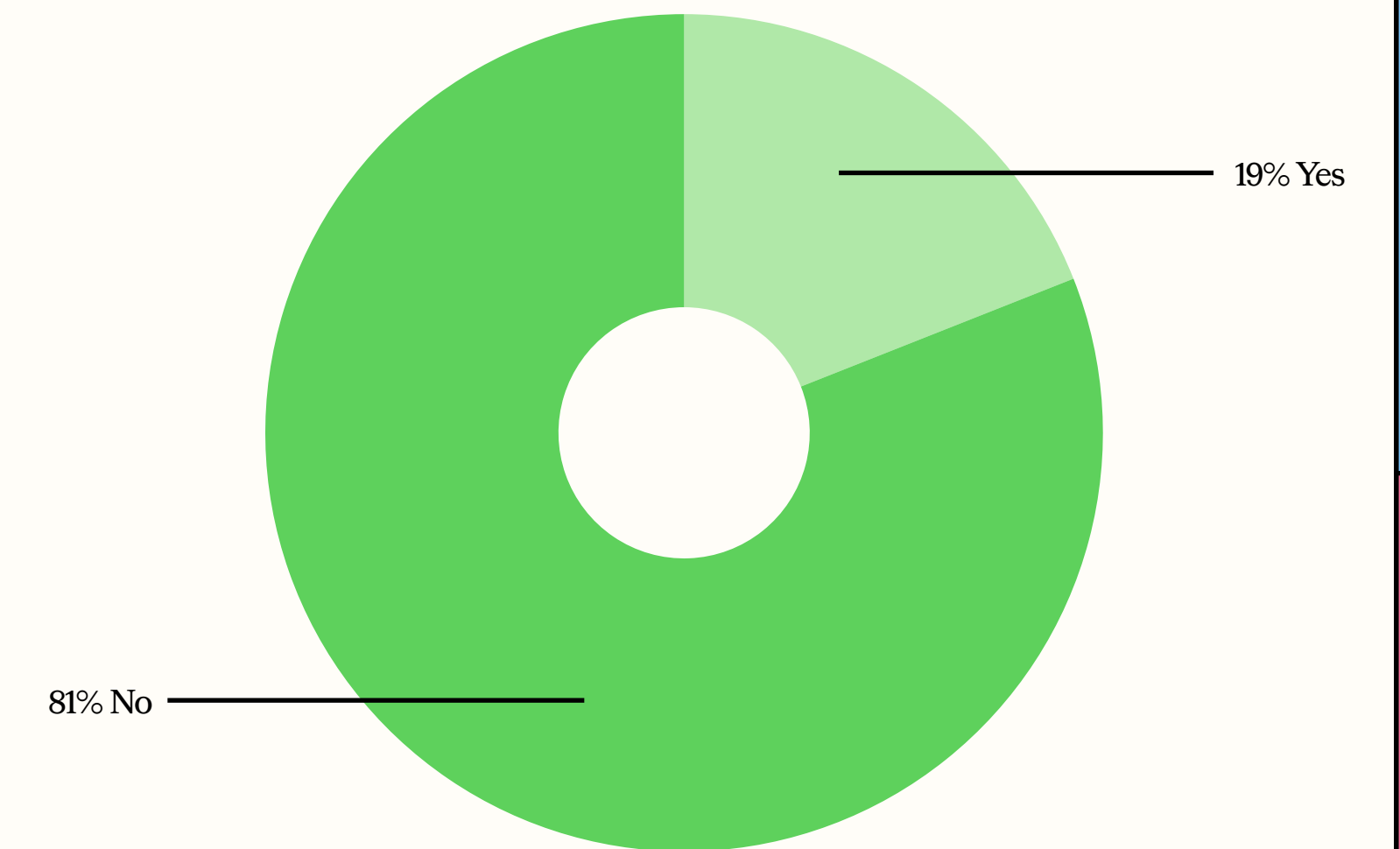
Living with disability?



English first language?



A parent?



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In April 2021, we conducted our first employee sentiment survey. The results revealed a consensus of a feeling of fulfillment through purpose-led work, but also that our teams had felt the impact of the uncharted success we experienced over the last year. Our collective had given everything to achieve our mission, and so we heard that we needed to give back to help them recharge and support us all in moving to the next phase of our journey. We consulted our collective to understand what would help, and as a result, introduced workshops to support mental well-being, gifted days which we all took off together, planned more time to disconnect from work and engage with one another through events and town halls, and moved to a new office space that was designed to feel like home.

One of the significant components of the feedback was around how we communicate with one another, and ensure that we are up to date with what is going on at PANGAIA, and also how we can connect, share, and have fun. Therefore we introduced our internal communication platform HIVE. HIVE is where we can communicate what we are up to, share activity, external campaigns, and interesting and relevant content, as well as enable teams to create spaces to bond and work together more effectively.

We have seen an initial registration rate of 90% to the platform, exceeding our goals. We also understood from the survey, and from talking to our collective, that more was needed to support our business as we grow. It was clear we needed to define how we would build strong foundations in how we attract, develop, and retain our talent, along with setting frameworks and foundations from which our collective can thrive. We also considered how we would continue to enhance our internal experience, from onboarding, communication and engagement, and our approach to inclusion, all of which are at the heart of what we do. From here we planned how this will drive performance, development and talent, and reward and recognition, to truly elevate the potential of every member of our collective.



# A look inside PANGAIA

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## Workshops

Walking on Earth workshop - a mental well-being workshop with Alexandra Crosswell - Assistant Professor, Department of Psychiatry at UCSF and renowned author (June)

World Mental Health Day workshop with Zoe Aston - Psychotherapist & Mental Health Specialist (October)

How to be an LGBTQIA+ ally with Albert Kennedy Trust training

How to be a trans ally (delivered internally)

## Rest days/extra gifted days

2 summer rest days  
July and August

Gifting employees with extra days off to rest and restore

Birthday off

## Forums

DE&I 'PANGAIA Parents' panel event supporting working parents (September)

Launched a monthly Town Hall series to provide a forum to ask questions and hear regular updates from the leadership team (September)

Held an employee 'sentiment' survey as a forum for employees to share feedback (April)

## Celebrations & Raising Awareness

Summer celebration sports day event in Hyde Park to get to know our new team members (August)

Introduced monthly socials (pizza/cocktails, lunches, drinks, Halloween party) to connect with cross-functional teams. (July - December)

Black History Month events (October)

- Partnered with Vinny Vending to send gift boxes to our teams
- Kit out our office with products supporting Black-owned businesses

## Communication

Launched a monthly newsletter to celebrate our team achievements, create transparency and share business and company updates on a regular basis (August)

## Office

Moved office locations & created more flexibility by providing everyone with Soho Works access passes for all locations.

Office move to Shoreditch in September, office move to 180 Strand in December, which was designed with sustainability and culture in mind.

## Growth

Annual formal review and promotion cycles

# Company

LinkedIn Top Startups UK 2021

LinkedIn Talent Award 2021

Deloitte Fast 50 Rising Star Award 2021

# Perks

PANGAIA box of joy

PANGAIA clothing allowance

ClassPass home workout videos

Health Insurance

# Diversity, Equity & Inclusion

Blind screening to minimize unconscious bias and ensure inclusivity across all applications

Developed our DEI efforts to an integrated DEI Fluency approach

## Frameworks

In 2021, we introduced our Retrospective & Feedback process. This provided a new structure for every employee to meet with their managers to share accomplishments, discuss challenges to then set goals for the coming year, and define what support they would need to get there.

To encourage positive and inclusive conversations, we arranged workshops on how we give and receive feedback from one another, to support not only the retrospective conversations but also apply to daily life at PANGAIA. We plan to continue developing our skills in this space to enhance our culture and community.

Alongside this, we ran our first formal salary review and promotions process following 2 years of rapid growth. It was important for us to benchmark and ensure fair pay for our expanded teams. At the heart of our approach was also the desire to involve and engage leaders and individuals in the process, consulting and involving them in the decision, and supporting individuals with feedback, and recommendations, to support their career growth throughout this coming year.

Our people team also embarked on procuring an integrated HR system. The aim of this is to ensure that our data is the best it can be in order for us to make effective decisions to support our collective. The implementation phase will take place in 2022.

## Support/Development

In addition, the People team launched manager peer groups, and facilitated sessions across our manager and leadership population. These have been created as a safe space where our leaders can learn from one another, as well as collectively talk about the challenges they face, and come together on solutions and opportunities in order to enhance our culture and ways of working. Building the skills, knowledge, and behaviors in our leaders to advance our culture.

But more importantly, we realized that to elevate human potential we needed to reprioritize some of the commitments to inclusivity made in 2020. This led us to focus on one goal: to create the right infrastructure to thrive.

We also reconsidered our approach to diversity, equity, and inclusion and positioned the **DEI Council** as an integral driver of change across the organization. Going forward, council members will be involved in addressing business challenges and will recommend actions to influence PANGAIA's culture, behavior, processes, and norms. We call this integrated approach DEI fluency.

## Key progress markers

- Conducted our first employee sentiment survey.
- Introduced various workshops, forums, and celebrations, and gifted extra rest days.
- Moved into a new office space.
- Introduced our internal communication platform, HIVE, with an initial 90% registration rate.
- Introduced our Retrospective & Feedback process.
- Introduced annual formal review and promotion cycles.
- Launched manager peer groups.
- Selected for numerous awards: LinkedIn Top Startups UK 2021, LinkedIn Talent Award 2021, Deloitte Fast 50 Rising Star Award 2021.

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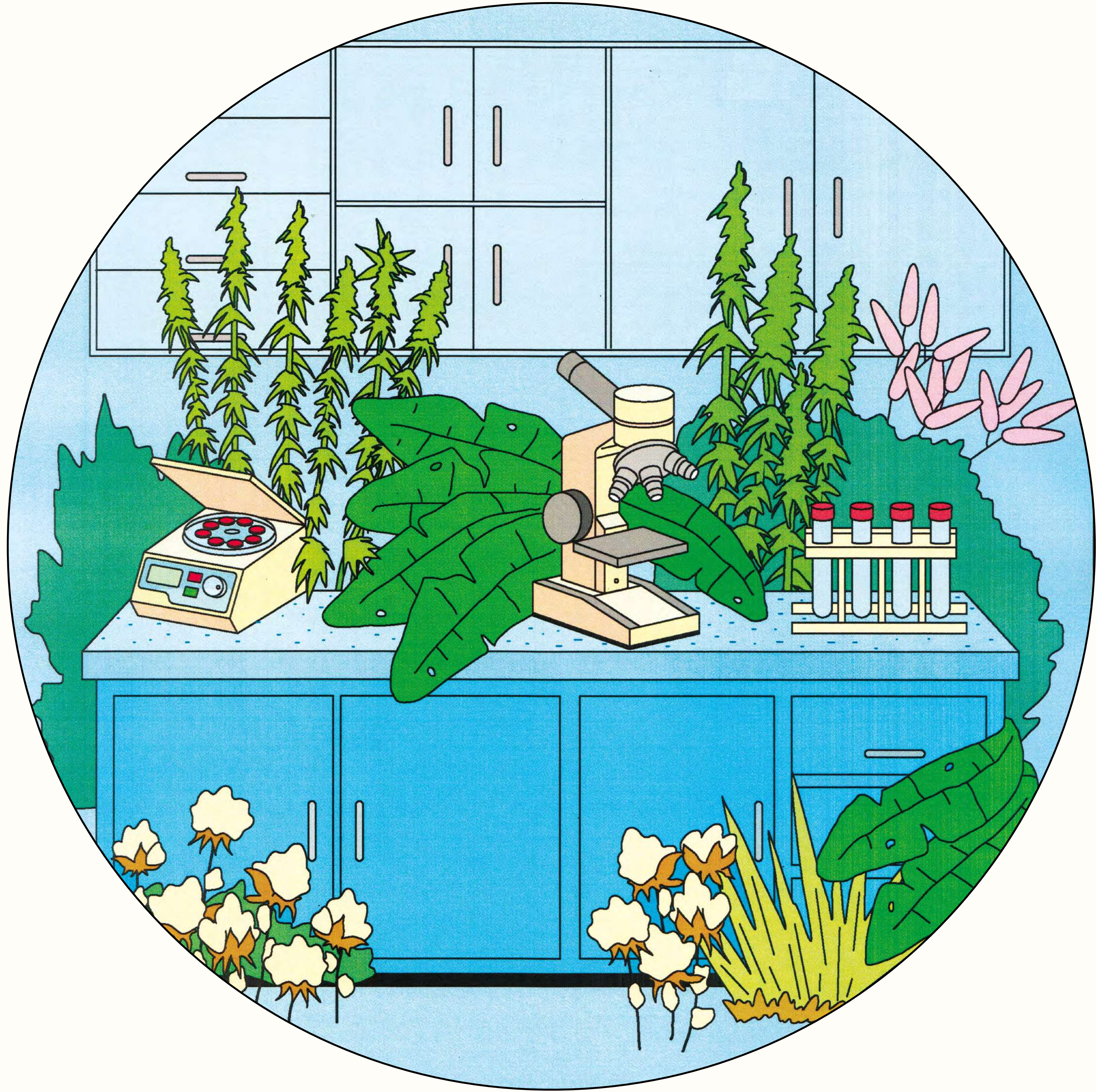
# Going forward

We pushed ourselves really hard in 2021 and yet, haven't fully delivered against our ambition of truly elevating our people in a supportive environment. We spent last year introspecting on how we could improve and have set out plans on the following:

- Build on the successful engagement of our PANGAIA HIVE intranet launch, Town Hall (re)launch, and introduce PANGAIA Summit (a company-wide offsite).
- Cultivate a culture of connection led by our Workplace Experience Specialist that includes regular social activities, team celebrations, and an employee volunteering program.
- Implement formal and integrated Diversity, Equity & Inclusion policy where practices are embedded in business decisions.
- Increase initiatives that elevate human potential, including family leave, extracurricular training, and study leave.
- Focus on talent development and pathways for skills training, career development, and peer mentorship.
- Review benefits for values alignment, and implement pay structure based on employee benchmarking and industry standards to create internal pay equity.

# Innovative Materials and Systems

01. Our Responsibility 02. Innovation  
03. Materials 04. Systems 05. Going forward



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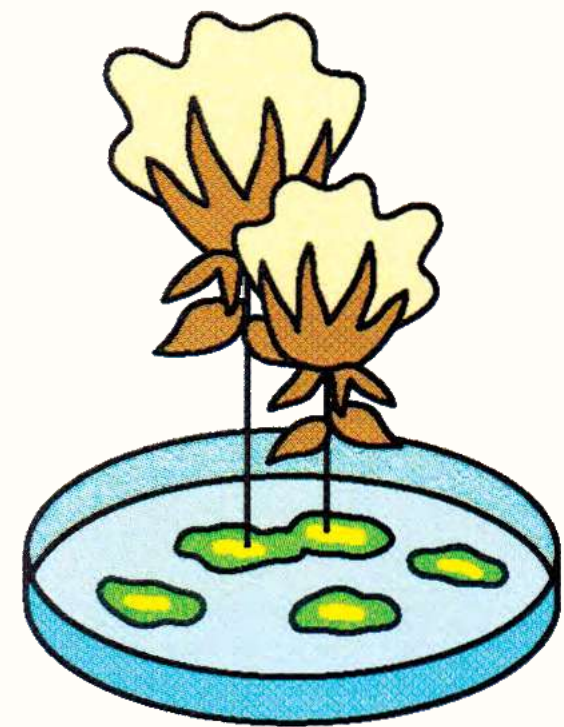
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# Our Responsibility: resource better

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PANGAIA was born with a vision of innovation and science. Our team of scientists and partner laboratories around the world are researching breakthrough Innovative Materials and Systems that empower our Earth Positive ambition.

Diversifying material options by introducing new and lower impact alternatives to the textile industry is crucial to limiting global warming not to mention protecting biodiversity.<sup>1</sup>

# Innovation

PANGAIA invests in, develops, and tests new fibers, textiles, chemical formulations, and low-impact processes that aim to reduce negative environmental and social impacts and regenerate nature's ecosystems.

Material science is central to solving these social and environmental problems for the textile and clothing industry and is the driving force behind PANGAIA LAB, a platform we launched this year that identifies and supports the most groundbreaking innovations in materials science.

Beyond using innovative materials within our own designs, we want to see these solutions scale across the industry through PANGAIA Science, our B2B arm that provides a 360-degree service of turn-key material solutions.

This seems like a good time to re-share the open invitation to collaborate with us.

## Research & Development (R&D) Strategy

Every solution we bring to market aims to tackle an environmental problem. With our partners, we are developing both new materials, and new chemical formulations with a focus on dyeing and finishing.

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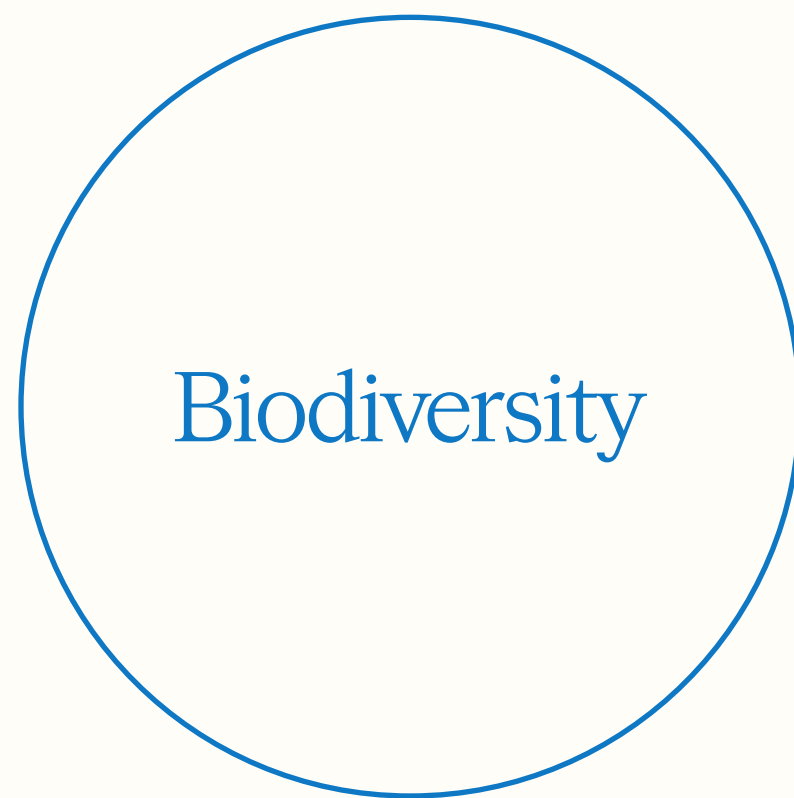
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# PANGAIA's R&D Pillars describe the main problems we seek to address and their corresponding solutions.



Regenerative Agriculture  
Man-made Cellulosic  
Fibers Perennial Crops/  
Plants Rubber Alternatives



Fossil Fuel Free  
KINTRA Bio-Polymers  
Carbon Capture Materials  
Biorefinery Models &  
Crossover Systems



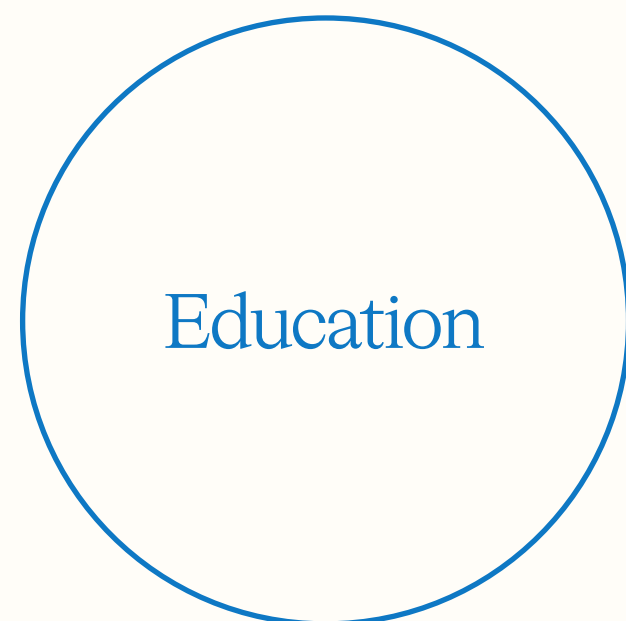
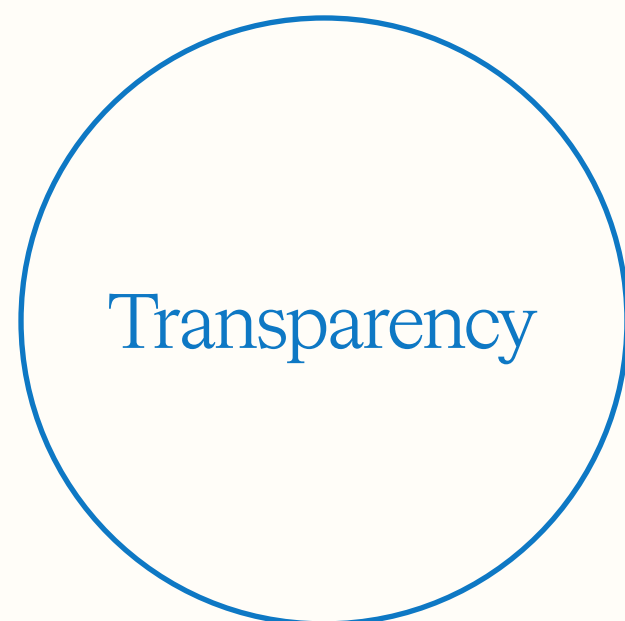
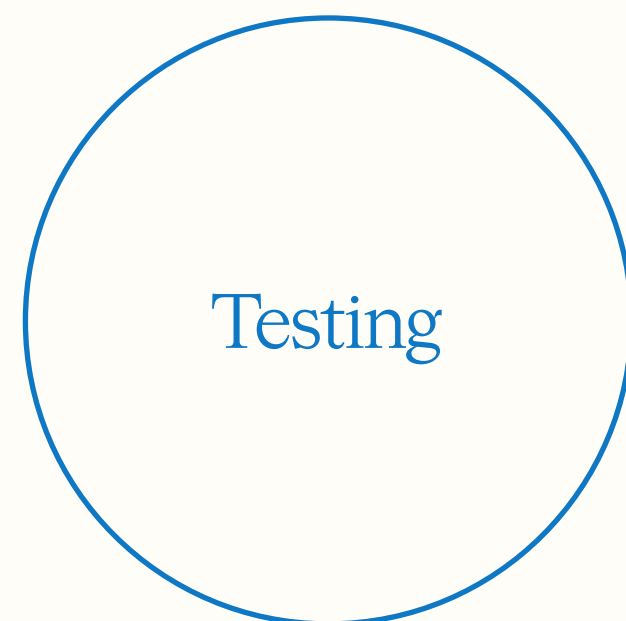
FLWRDWN Leather  
Alternatives Cell-Cultured  
Materials Recycled Wool &  
Cashmere



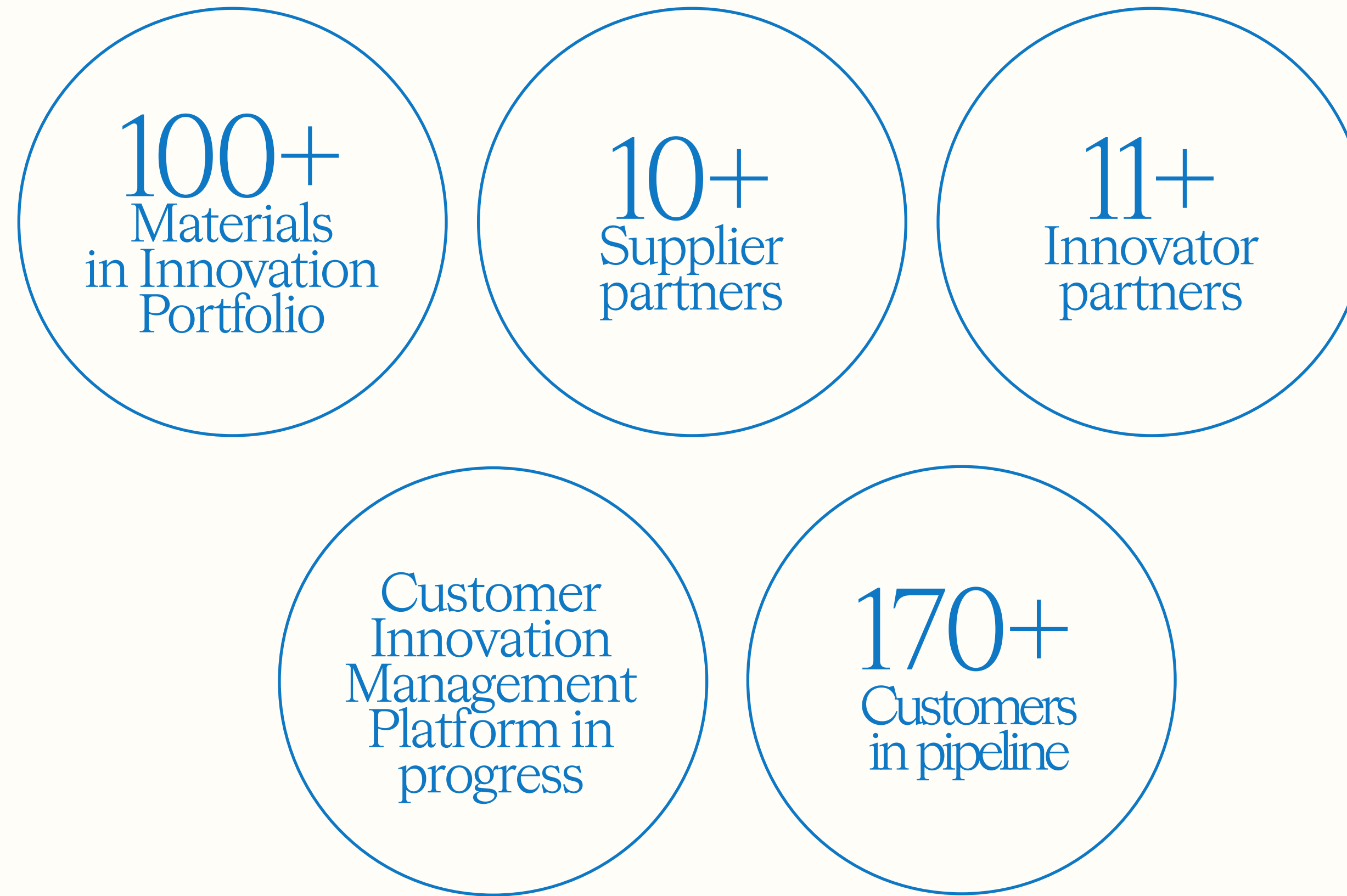
PPRMINT Natural Dyes &  
Pigments Plasma  
Treatments Waterproof  
Membranes Microfibers/  
Microplastics



Textile/Dye Recycling  
Agricultural Waste  
Materials Product  
Recycling Product  
Longevity & Service



# How we're influencing change beyond PANGAIA through PANGAIA Science:



# Innovation Launches

In 2021, we introduced 7 new materials and 3 finishes, some owned and patented by us, others the result of joint ventures or industrial partnerships. We are currently undertaking LCA's for our key innovations to quantify the impact of these solutions.

## FLWRDWN™

- **FLWRDWN™ Lite** is our lightweight plant-based, breathable alternative to traditional animal-derived insulative material, the ultimate light, warm and versatile layer. We use wildflowers that directly support habitat conservation and are grown without any pesticides or artificial irrigation—preventing pollution and saving water. The wildflowers have a down-like microstructure, so when we combine them with our bio-based polymer it brings out the thermal-warming properties.

## PLNTFIBER™

- **PLNTFIBER™** uses responsibly sourced, renewable, fast-growing plants. It is a blend of Himalayan nettle fiber, bamboo lyocell, and eucalyptus lyocell embedded with seaweed—four fast-growing plants that do not require pesticides, fertilizers, or irrigation.

## FRUTFIBER™

- **FRUTFIBER™** repurposes biomass waste, turning banana leaf fiber, pineapple leaf fiber and bamboo into a new, innovative fabric with natural materials that are usually considered agricultural waste.

## C-Fiber™

- **C-Fiber™** combines eucalyptus pulp and seaweed powder to create a fabric that is water-saving, biobased, and 100% biodegradable. Seaweed is a naturally regenerative resource that grows abundantly under the sea. We harvest ours every four years from Iceland, allowing for full regeneration in between. The eucalyptus pulp is turned into lyocell made through a closed-loop production system—a process that recycles water and reuses up to 99% of the solvents used. This creates very little waste and results in a fiber that biodegrades in water, landfills, and composting environments.

## PANhemp™ & PANettle™

- **PANhemp™** is made from hemp, organic cotton, natural Indigo dye, and peppermint oil (PPRMINT™). Hemp grows well without pesticides, additional watering and yields 3x more fiber than cotton per acre. The one-of-a-kind fabric, is made with organic cotton and rain-fed hemp blend. It is then woven in reverse to create our signature, rare, Left Hand twill.
- **PANettle™** is a Nettle Selvedge Denim blend using wild Himalayan nettle, organic cotton, and infused with PPRMINT™. It is created using a left-hand twill for added softness. Nettle grows abundantly, is naturally regenerative (growing back every year), helps root growth and soil stabilization in landslide-prone mountains and helps support local communities

## Twelve

- **Twelve** sunglasses are created in partnership with Twelve, a carbon transformation company that makes essential products from air, not oil. Our first PANGAIA LAB innovation, the CO2Made® polycarbonate lenses are made partially from CO<sub>2</sub>.

## Finishes introduced in 2021:

### AIR-INK®

- **AIR-INK®** is a carbon-capture technology that captures air pollution particles and diverts harmful substances from the air we breathe. The particles are turned into different grades of water-based inks, dispersions, and coatings.

### Colorifix

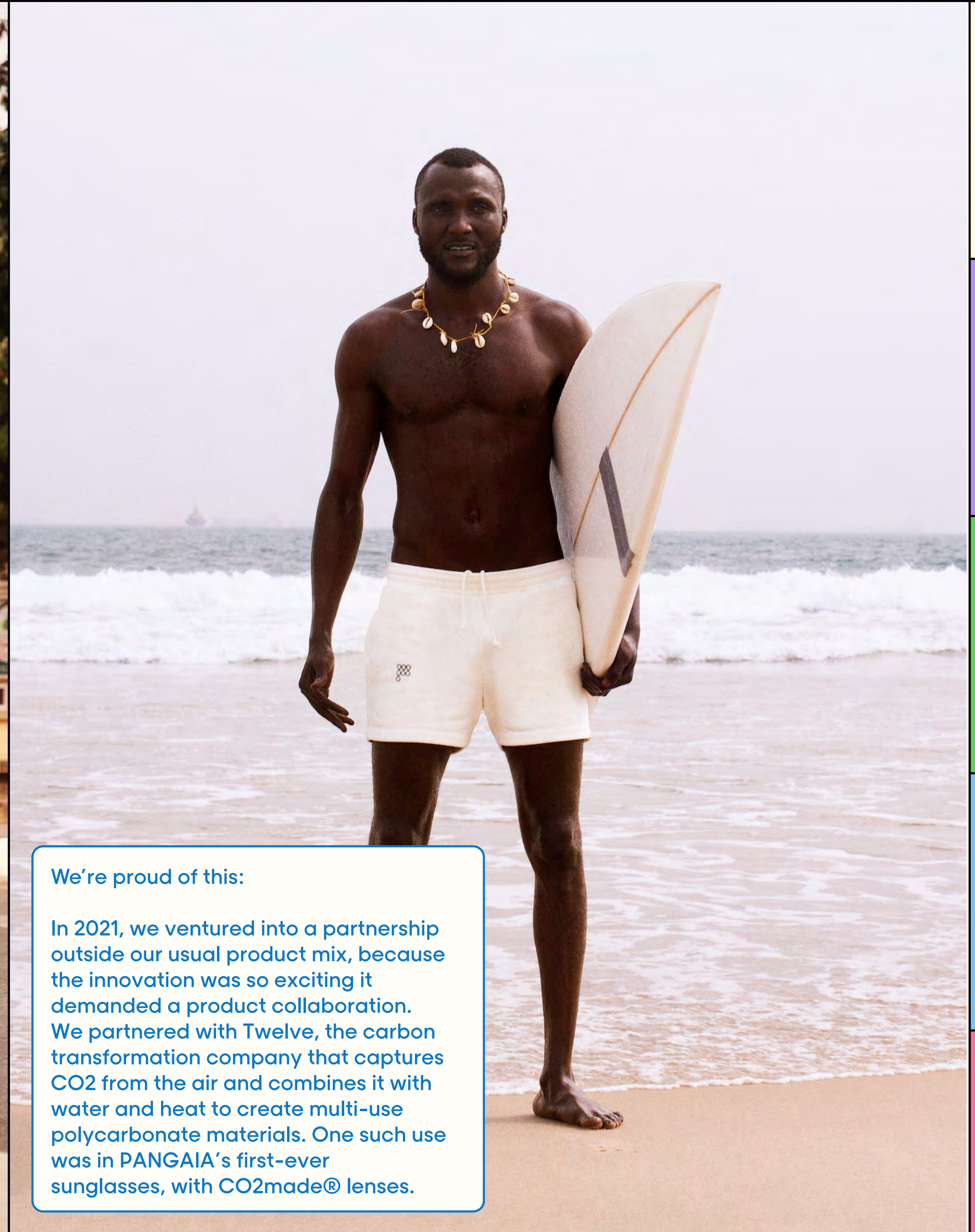
- **Colorifix** uses bacteria found in organisms to replicate pigments found in nature. By accessing the DNA blueprint, and with the help of amazing microbes, we created unique shades with zero harmful chemicals, no bulk supply chain, and less water and energy used.

### MiDori® bioWick

- **MiDori® bioWick** is a revolutionary biobased moisture-wicking finish that replaces the need for non-renewable wicking treatments. The formula is 100% biocarbon based, making it the first-of-its-kind in the industry. The active ingredient is 100% dried microalgae biomass which has been grown in controlled, sealed environments and is GMO-free. It provides excellent durability and fast-drying properties, ideal for performance wear.



Image by Jenke Ahmed Tailly, PANGAIA.



We're proud of this:

In 2021, we ventured into a partnership outside our usual product mix, because the innovation was so exciting it demanded a product collaboration. We partnered with Twelve, the carbon transformation company that captures CO2 from the air and combines it with water and heat to create multi-use polycarbonate materials. One such use was in PANGAIA's first-ever sunglasses, with CO2made® lenses.

Image by Jenke Ahmed Tailly, PANGAIA.

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# A note on traditional materials

## Synthetics

### Did you know?

Fossil fuel based synthetic fibers (including polyester and nylon) accounted for 62% of global fiber production in 2020.<sup>2</sup>

Synthetic fibers (like polyester and nylon) are typically made from petroleum or coal. They are created ‘synthetically’ by lab-based chemical reactions, rather than occurring in nature (in contrast to ‘natural’ plant fibers like cellulose). Global decarbonization targets require us to leave fossil fuels in the ground and increase renewable raw material and energy sources. Therefore, alternative raw material sources for synthetic materials are needed. This is the first challenge we are tackling via a long-term innovation partnership with Kintra.

## Cotton

### Did you know?

Cotton is the second-most popular fiber (after polyester) and accounted for 24.2% of global fiber production as of 2020.<sup>3</sup>

Conventional cotton is grown using synthetic chemicals, including pesticides<sup>4</sup> and accounts for more than 69% of all cotton produced<sup>5</sup>. Only 0.95% of the remaining market share is comprised of organic cotton<sup>6</sup>.

There are concerns over the impacts of synthetic pesticides and other chemicals used on cotton crops because they leach into soil and water and can combine with other synthetic compounds in nature to create uncontrolled damage to the environment.

In some regions, water usage from cotton irrigation can pose water risks<sup>7</sup>, but this varies greatly, with around half of cotton cultivated globally being purely rainfed. In order to manage these impacts, we have avoided using conventional cotton in favor of organic sourcing exclusively. Organic cotton guarantees no pesticides or fertilizers are used and gives assurances on improved land management practices.

To satisfy a growing demand for cotton and simultaneously safeguard biodiversity, we are also investing in regenerative farming methods - a significant step beyond organic. These methods require farm-specific analysis that accounts for the exact conditions and adjusts the use of irrigation type, volume and timing, pesticide and fertilizer use, crop rotation, soil tillage, and all other contributing factors to optimize yields in balance with the local ecosystem. You can read more about our regenerative initiatives later in this chapter.

In addition, we are developing new supply chains for alternative fibers to alleviate dependence on cotton. These include a partnership with Himalayan Wild Fibers to harvest nettle and a range of Man-Made Cellulosic Fibers (MMCFs), which we will move on to next.



# MMCF

## Did you know?

MMCFs account for 6% of the global fiber market – and only 0.4% are from recycled materials.<sup>8</sup>

Man-made cellulosic fibers (MMCFs) are generally made from wood pulp that is chemically processed into fibers. They are sometimes referred to as ‘natural polymers’ because they are created synthetically, but their final chemical composition is cellulose.

The variation in chemical processing has resulted in multiple fibers and textiles, including viscose, lyocell, and rayon. For our MMCFs, we use lyocell closed-loop processing, which contains and recycles the chemicals and water used. This is currently the optimal method for this type of MMCF construction.

So what’s the problem with this group of fibers?

Well, MMCFs are sometimes made from trees logged in protected and endangered forests, contributing to climate change and ecological damage, as well as impacting indigenous communities.

Secondly, the chemical solvents used can be highly toxic, especially when not held in closed-loop systems that allow for repeated chemical recovery and reuse, such as those sometimes used to make lyocell. We do concede that even the chemicals in closed-loop systems must be treated and disposed of properly once their effectiveness is depleted.

So, we have two target areas for improving MMCFs:

- Source lower impact raw materials (in place of wood pulp)
- Adopt safer chemistry, or avoid solvents altogether

So far, we have developed three new blends of MMCFs - PLNTFIBER™ and FRUTFIBER™ (using fruit and plant waste from the food industry), and C-Fiber™ (combining seaweed powder and eucalyptus pulp), which alleviates sole dependence on wood pulp. In 2021, 6% of our products were made with our MMCF blends.

# Animal fibers

## Did you know?

Animal fibers account for a tiny fraction of global fibers – totaling around 1.6%, with 1% of that being wool.<sup>9</sup>

Animal fibers are brilliant providers of insulation, natural antibacterial properties, and durability. However, their industrial cultivation can lead to environmental, ecological, and biodiversity damage when improperly managed. Beyond this, the welfare of animals, the quality of the husbandry (the care, cultivation, and breeding of animals), and our recognition of animals as sentient beings are also the reasons why PANGAIA considers the use of animal fibers very carefully.

Our approach to the use of any animal-derived materials is:

- Preference always for recycled inputs
- Any virgin inputs must be certified to the high animal welfare standards

We have 2 solutions in this area. The first is recycled cashmere, which alleviates pressure on virgin cashmere fiber supplies. Growing demand for cashmere has led to animal welfare concerns and ecological decline in cashmere herding countries, so offering this fiber responsibly at PANGAIA means prioritizing the use of recycled cashmere fibers.

The second fiber solution we have, and one we are currently expanding into new materials, is FLWRDWN™, our patented plant-based alternative to animal and synthetic down materials.

FLWRDWN™ is created from naturally regenerative wildflowers and harvested by local communities. The flowers are processed and combined with a biopolymer to form high-performance, low-impact insulating fibers.

FLWRDWN™ is our flagship innovation which launched in 2019 and is now being developed into a range of insulating materials. In 2021, we launched FLWRDWN™ Lite, our lightweight version designed to be worn all year round.

# Chemicals in focus

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## What's the problem?

Many of the chemicals used in the textile and apparel industry are derived from petrochemicals. This is problematic because we need to stop extracting finite fossil fuels from the ground.

Synthetic chemical solutions are not all bad. In fact, some have allowed the use of less water and less energy, and longer-lasting color fastness in the dyeing process, compared to 'natural' alternatives. But this must be balanced with chemical safety.

## What's the solution?

With our partners, we are innovating new solutions for textile dyeing and finishing. In our Planet chapter, we shared that the dyeing and finishing stage of production is linked to major emission release, and through our LCAs, we have uncovered that this stage also has a high water consumption. Therefore, innovation in this space is a priority for us.

For dyeing, we are developing solutions with Colorifix. Colorifix bioengineers organisms to develop and fix pigments onto textiles. This biological process is more efficient than industrial chemical processes. In 2021 we launched a capsule of Colorifix dyed pieces in our 365 range.

For printing, we have partnered with Air-ink, a start-up that captures exhaust emissions and extracts the carbon from them, which can then be used as ink. Our collaboration in 2021 led to a range of printed pieces that we hope can expand across other products requiring black ink.

For activewear, textile finishings are necessary for temperature control, moisture-wicking, and breathability. These finishings are typically created from petrochemicals. In 2021 we were the first brand to launch products using MiDori® bioWick - a revolutionary biobased moisture-wicking finish for high-performance textiles, where the active ingredient is 100% dried microalgae biomass.

Textiles with antimicrobial finishes (which work against a broad spectrum of microbes including bacteria, mold, mildew, algae, and even viruses) typically require chemical formulations containing heavy metals, such as silver. Such metals can cause toxicity in wastewater when untreated. To avoid this, we use PPRMINT™ - a formulation containing peppermint essential oil, which is extracted from the plant with steam.

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# How we think about Materials

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## Material Classification

### Natural

### Man-Made



From design to production, we endeavor to source raw materials responsibly and to ensure our products have a lower impact than those conventionally available today. We currently have 2 ways of assessing materials before we determine if they are the right fit for our supply chain and values.

- Life Cycle Assessment (LCA) - Whenever possible, we analyze LCA data behind new materials to better understand the environmental impact.
- Preferred Material List (PML) - Introduced in 2021 and updated throughout the year, this is a broader overview of the materials we work with and how they rank against our impact evaluations, inclusive of LCA insights and additional impact metrics.

## Material Hierarchy

### Natural Cellulosics

Champions	Runner Ups	Middle of the Pack	Laggards	Drop Outs
Regenerative Cotton 100%  Organic Linen & Organic Hemp 100%  Organic Kapok 100%	In transition Regenerative Cotton  Mechanically Recycled cotton >50%  Conventional Linen  Conventional Lemp  Conventional Kapok	Certified Organic Cotton  In transition Organic Certified Cotton  Mechanical Recycled cotton <50%  Conventional Nettle		

# Natural Protein

Origins	Natural Protein				
	Champions	Runner Ups	Middle of the Pack	Laggards	Drop Outs
Planet	Regenerative Cashmere 100%  Post-Consumer Recycled Cashmere 100%	Pre-consumer Recycled Cashmere 100%  Pre-consumer Recycled Alpaca 100%  Responsible Wool Standard >50%  Recycled Wool > 50%	Organic Wool < 50%  Recycled Wool < 50%  Recycled Cashmere > 80%	Pre-consumer Recycled Cashmere < 80%  RWS Wool < 50%  Pre-consumer Recycled Alpaca < 80%	Conventional Silk  Conventional Wool  Conventional Cashmere  Animal Fur  Animal Leather  Recycled Leather

# Man made, natural polymer, cellulosic (aka MMCF)

Innovation	Man made, natural polymer, cellulosic (aka MMCF)				
	Champions	Runner Ups	Middle of the Pack	Laggards	Drop Outs
Giving Back		Infinna™  NuCycl™	C-FIBER™  PLNTFIBER™  FRUTFIBER™  Bamboo Lyocell  Re:newcell™  Circulose™  Lyocell		Viscose  Rayon  Modal  Cupro

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Man made, synthetic polymer, bio-synthetic

Origins	Champions	Runner Ups	Middle of the Pack	Laggards	Drop Outs
PLANET	<p>KINTRA</p> <p>FLWRDWN™</p> <p>100% Biobased &amp; Biodegradable nylon *This doesn't exist, yet!</p> <p>100% Biobased &amp; Biodegradable elastane *This doesn't exist, yet!</p>	<p>100% Biobased Nylon</p> <p>100% Biodegradable Nylon</p> <p>30%–100% Biobased Elastane</p> <p>VEGEA™ leather *For accessories only</p> <p>Spiber™</p>	<p>100% Bio-based PLA</p>		

Man made, synthetic polymer, petro chemical

Innovation	Champions	Runner Ups	Middle of the Pack	Laggards	Drop Outs
GIVING BACK	<p>Recycled Elastane 50%–100%</p>	<p>100% Biodegradable Nylon</p> <p>Post-consumer Mechanically Recycled Nylon *</p> <p>Recycled Elastane &gt; 50%</p>	<p>ROICA™ V550 *Where stretch is essential to the design</p> <p>Pre-consumer Mechanically Recycled Nylon</p> <p>Pre Consumer Chemically Recycled Nylon</p> <p>Certified Post-Consumer rPET (mechanically or chemically recycled)</p>	<p>Pre-Consumer Mechanically Recycled Polyester (rPET) *Accessories only</p> <p>Pre-Consumer Chemically rPET *Accessories only</p> <p>Recycled Elastane &lt; 50%</p>	<p>Conventional Polyester</p> <p>Conventional Elastane</p> <p>Conventional PLA</p> <p>Conventional Nylon</p> <p>Polyurethane</p> <p>PVC</p>

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# What informs our Preferred Material List

We consider as broad a scope as we possibly can when evaluating materials and plotting them against our PML. These include end-of-life pathways, visibility of the supply chain and raw material inputs, LCA results, certifications, chemical and water intensity, recycled and diverted waste streams, geographical provenance, end-use of the material, and performance against conventional alternatives.

## Champions

These are materials that encompass the most progressive standards in their category, often bringing benefits to more than one sustainability issue at once. They are at the forefront of innovative systems, which makes them special, rare, and more challenging to access today. We're on a mission to scale their positive impact.

In 2021, 2% of our products featured Champion materials. Our next milestone is to reach a 15% mix of Champions.

## Runner Ups

These materials offer commercially accessible solutions to our greatest impact concerns. They are often the best solutions available today and act as important stepping stones toward their future Champion replacements.

Runner Ups made up 21% of our materials in 2021.

## Middle of the Pack

These materials meet reasonable baseline requirements when it comes to impact considerations and are frequently readily available in today's textile industry, which make them a dominant category in our portfolio today.

In 2021, our customers showed a strong preference for our products made of organic cotton, which meant that 66% of our products fell into Middle of the Pack materials.

For this important category of materials, we see great potential for improvements towards transitioning from organic to regenerative sources. We are proud to be diversifying this category with our contributions as an over-reliance on any single material stream exacerbates their footprint. However, we also recognize that these qualities have room to improve.

## Laggards & Drop Outs

Laggards are those materials that we only ever use if they are critical to a functional purpose or if no better alternatives exist today. We see them as short-term compromises while we look or invent better alternatives.

In 2021, we did not use any Laggards in our main materials. However, these compositions do feature in our trims which we aren't reporting on yet (work in progress!).

Drop Outs are materials we will never consider. Their harmful impacts far outweigh any reasons to use them.

We did not use any materials falling in this category in 2021.

While we do our best to steer our material direction in the most responsible way, we are also regularly faced with difficult choices that challenge our impact principles. As we strive for Champions across the board, we often have to make compromises in the short term while we investigate the longer-term innovations that have the potential to deliver all of our impact ambitions (i.e. low bio-based content in our bio-polymer development but could yield great results in the future!). Therefore, this PML is reviewed regularly throughout the year to reflect the evolution in our own knowledge as well as the expansions of our product ranges and innovation landscape.

# Life Cycle Assessments

We're proud of this:

Analyzing the footprint of 96% of our materials by volume has been an enormous task, and underpins our commitment to quantifying and reducing our impact and targeting smart solutions.

Our LCAs provide insight into the environmental impact of our product's production cycle, from raw materials to manufacturing and distribution. We work with our partners to measure, interpret and then reduce the environmental footprint of our products.

We conduct our product Life Cycle Assessments (LCAs) in partnership with Green Story.

Our LCAs measure cradle-to-gate impacts across 13 impact metrics which include global warming potential, water and energy consumption, human toxicity levels, freshwater ecotoxicity, and ozone layer depletion, to name a few. The analysis of each metric spans upstream fiber, yarn, fabric, dyeing, textile finishing, and garment assembly processes.

Each metric is vital and important, and over time, we are building out a data framework capable of drawing meaningful insights across all measurements. For now, we have chosen to prioritize our attention on Blue Water Consumption, Global Warming Potential, and Primary Energy Demand.

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## What?

- Primary Energy Demand.

## Why?

- Everything requires energy and has an associated footprint attributed to it.

This metric looks at the sum of all energy (both direct and indirect) used to transform or transport raw materials into products and powering machinery such as heating dye baths.

## What?

- Global warming potential (GWP)

## Why?

- Global warming happens because greenhouse gasses (GHGs) trap heat in the atmosphere, but each gas causes different levels of heating.

GWP compares the heat energy that 1 ton of any greenhouse gas absorbs to what 1 ton of carbon dioxide (CO<sub>2</sub>) absorbs.

CO<sub>2</sub> traps less energy than other greenhouse gasses, but it does so over a very long period of time, so its GWP is 1.

Methane, on the other hand, has a GWP of around 28–36 because it lasts only about a decade on average, but absorbs much more energy than CO<sub>2</sub>.

The larger the GWP, the more that gas warms the Earth compared to CO<sub>2</sub>.

Therefore, reducing methane in the short term may slow down heating quickly, but in the long term, it is carbon dioxide that needs to be eliminated to hold temperatures stable at or below 1.5 degrees.

## What?

- Blue Water Consumption

## Why?

- Water moves naturally in cycles and diverting it from those cycles (for example, pumping it from rivers to use for textile dyeing) can have an impact on water availability and quality. Water consumption allows us to measure such impacts.

Blue water consumption models water that has been sourced from surface or groundwater resources and is either evaporated, incorporated into a product, or taken from one body of water and/or returned to another.

Irrigated agriculture, industry, and domestic water use can each have a blue water footprint<sup>10</sup>.

Looking into our water footprint shows us the **hotspots** in our supply chain's water dependencies.

# In 2021, we assessed these materials and processes:

1. Cotton: both organic and recycled blends
2. MMCFs (Lycocell qualities, PLNTFIBER™, C-Fiber™, and FRUTFiber™)
3. Animal Fibers (Cashmere, Wool)
4. Linen
5. Nylon
6. Stretch (our activewear and move qualities with elastane)
7. Denim (Hemp & Nettle)
8. FLWRDWN™ (Heavy & Light)
9. PPRMINT™ treatment
10. Cotton Dyeing

LCA Results vs PRODUCTION 2021	KPI	FY20	FY21	ORIGINS
Total by PRODUCTION (2021)	3 464 676,7	205 916 888,7	64 284 099,9	
Sheep Farming	6%	1%	2%	PLANET
Cultivation & Fiber Production	2%	19%	11%	
Yarn Production	19%	4%	18%	
Sizing	0%	0%	0%	PEOPLE
Knitted Fabric Production/Weaving	6%	1%	6%	
Dyeing	51%	21%	46%	
Cut & Sew	6%	0%	6%	INNOVATION
Garment Washing	0%	0%	0%	
Waste Water Treatment	0%	0%	60%	
Inner Transport	2%	0%	2%	GIVING BACK
Distribution	4%	0%	3%	

We discovered that the dyeing and finishing stages have the highest environmental impacts across all material qualities. This stage is 64% more carbon-intensive than the second-highest impact category: yarn production. Our goal is to reduce emissions related to dyeing and finishing by 10% in 2022, with annual reductions eventually reaching a 75% reduction by 2025 and a 100% reduction by 2040.

These targets are central to our decarbonization strategy and rely on us working with partners to transition to renewable energy, localize production for various material qualities, and explore solutions with our R&D team to develop low water and low energy solutions. Additionally, we will increase the amount of primary data we harvest to improve the accuracy of our LCA modeling.

**We're proud of this:**

83% of our products available online are Climate Positive. This means we use the results of our LCAs to offset footprint to Carbon Neutral. By additionally planting, protecting or restoring a plant with every purchase, each product becomes Climate Positive. Look out for our Climate Positive call-out on our website product pages for more information!

# Case study: Zeroing in on our 365 range

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Our LCAs revealed that cotton (organic and recycled) comprises 81% of PANGAIA's total fiber mix by volume.

There are a number of environmental and social issues that can arise from cotton production, including water and pesticide consumption. These risks depend on many factors, including local climatic conditions and variation in farming practices.

From our analysis, we learned that the biggest footprint of our 365 cotton range is in the dyeing stage of production, which takes place in Portugal. This is consistent across all 3 metrics of primary energy demand, global warming potential, and blue water consumption. The main reason for this is the thermal energy and electricity consumption involved during the dyeing process.

Key actions we plan to take are:

- Discuss improvement of water recovery processes with our suppliers (particularly as Portugal faces medium-high water risks).
- Work with factories to increase renewable energy use.
- Investing in new dye innovations including Colorifix (which requires only a quarter of the processing cycles of conventional dyeing, saving both energy and water).

Did you know?

Cotton accounts for 80% of the global natural cellulosic fiber market and just 1% of this cotton is organic.<sup>11</sup>

# Systems

## Regenerative systems

This year, we laid the foundations to define how PANGAIA will engage with regenerative systems. This means we have identified what we want to measure and have nominated priority materials for exploration.

As you can see from our Preferred Material List and LCAs, cotton is of huge strategic importance for PANGAIA's Material Strategy.

## The problem with current agricultural systems:

- They exist in inherently extractive systems (meaning they take more from the planet than they give back) that do not prioritize critical components such as soil health, pesticide use, farmer livelihoods, and equity.
- Many agricultural systems currently focus on mono-cropping (growing one singular species of plant, i.e. cotton or palm), which generates landscapes that lack biodiversity and other co-benefits, and increases the risk of disease and pest outbreaks.
- As we face the climate crisis, farmers are facing extreme climatic conditions in the form of droughts and irregular rainfall, which can have devastating consequences for communities that depend on agricultural systems for their livelihoods, as well as having detrimental effects on the quality of the raw material being harvested.
- Many cropping systems exist in water-stressed regions with poor irrigation systems and poor water quality, which can affect yield, and can critically affect surrounding communities with irregular incomes.
- Current systems can have an over-reliance on chemical inputs for pest control, which is both damaging the land and has high production costs for farmers.

## The Regenerative Solution

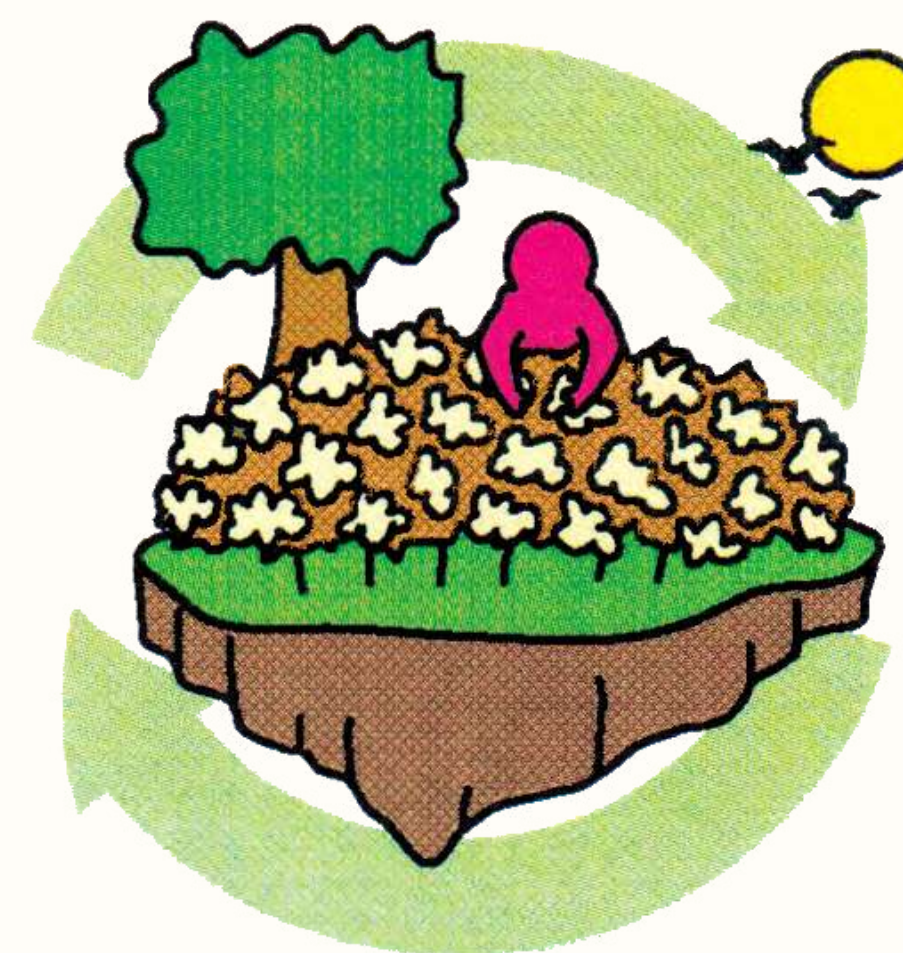
Regenerative agriculture encompasses holistic practices that create net beneficial impacts on ecosystem services. These activities must provide net beneficial economic and social impacts for farmers and local communities to ensure sustainability over the long term<sup>12</sup>.

**“At Pangaia, we aim to source materials from nature that give back more than they take.**

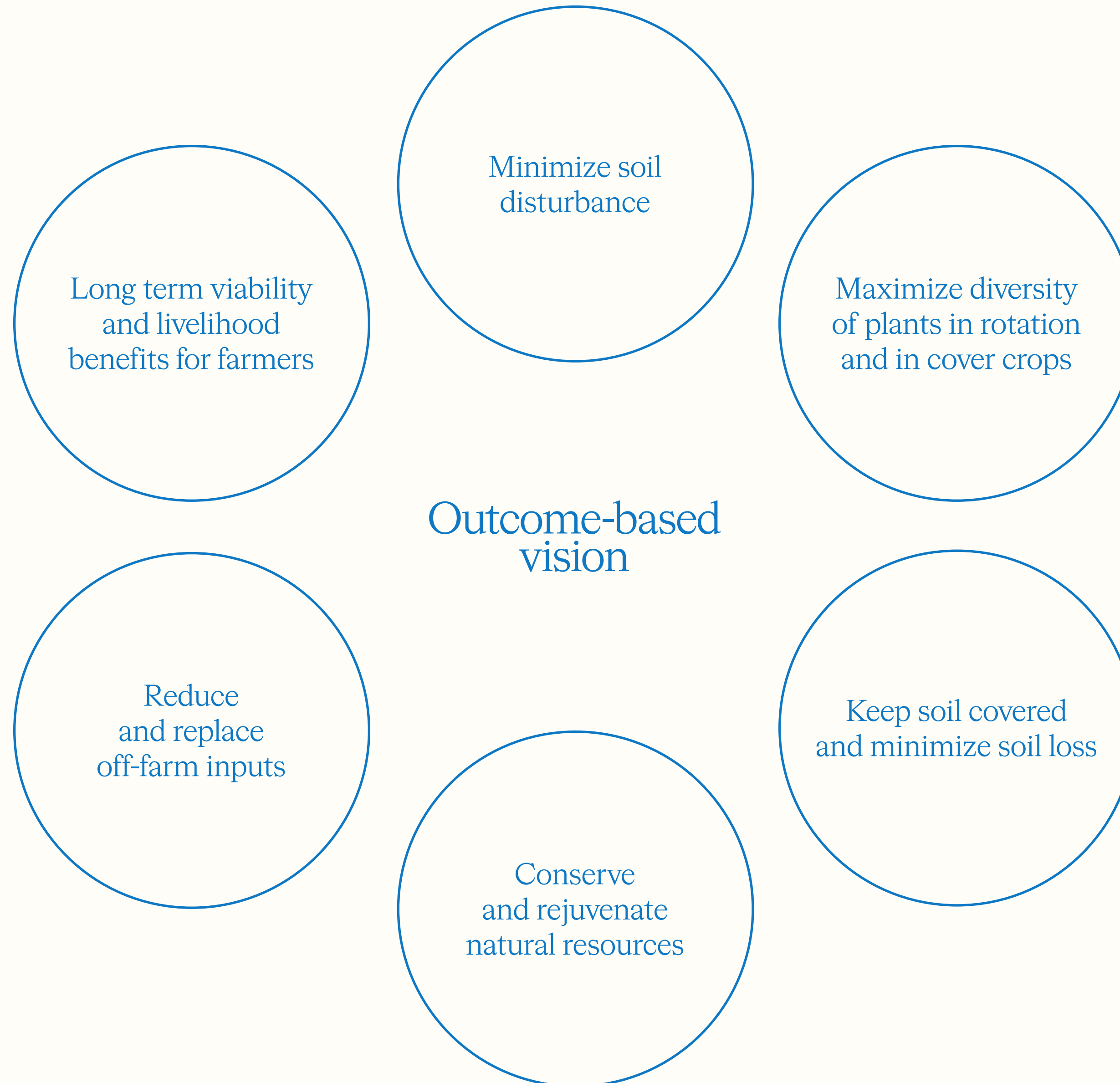
**We are committed to creating and measuring the social and environmental impact we have in all landscapes we depend on, we do this by supporting approaches that are consistent with the six regenerative agriculture principles as defined by our partner, PUR Projet.**

**Together, we are building strategic partnerships with multiple stakeholders (farmers, suppliers, research institutes, brands) to embark collectively on this regenerative pathway towards earth positive supply chains.**

**We will advocate wildly for regenerative agriculture in the hope others follow us in this transition.”**



# The 6 principles of our Regenerative programs



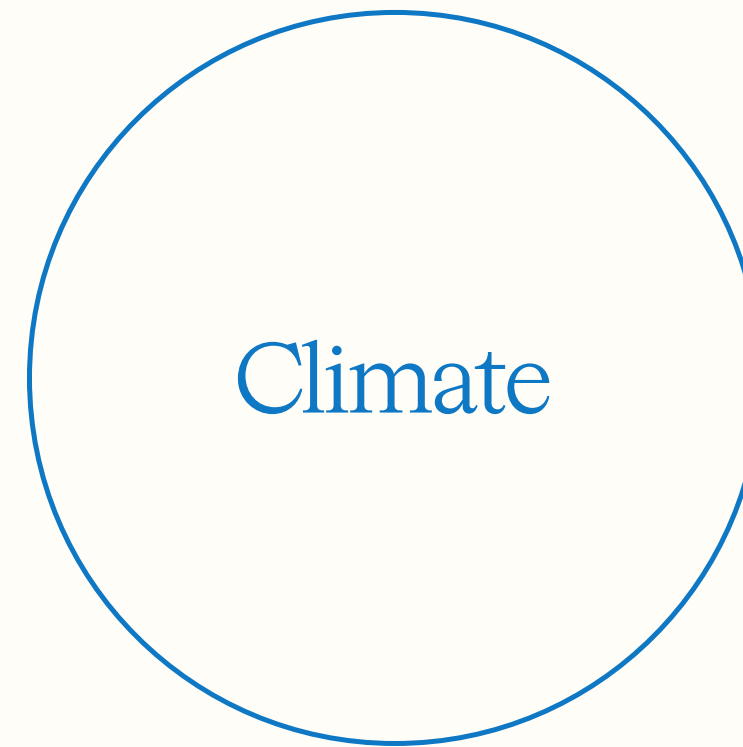


# What regenerative outcomes do we want to achieve



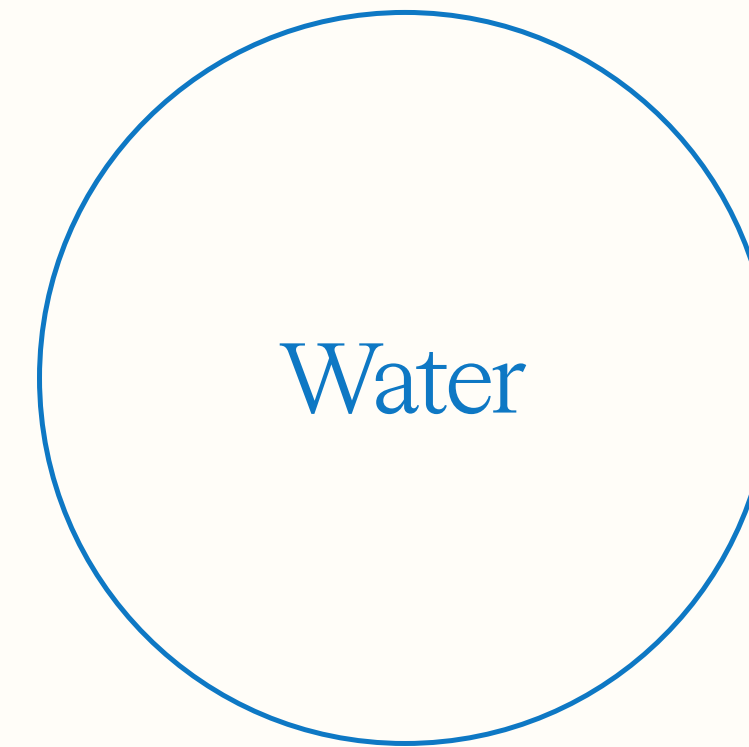
Soil health

Net increase in soil organic matter.



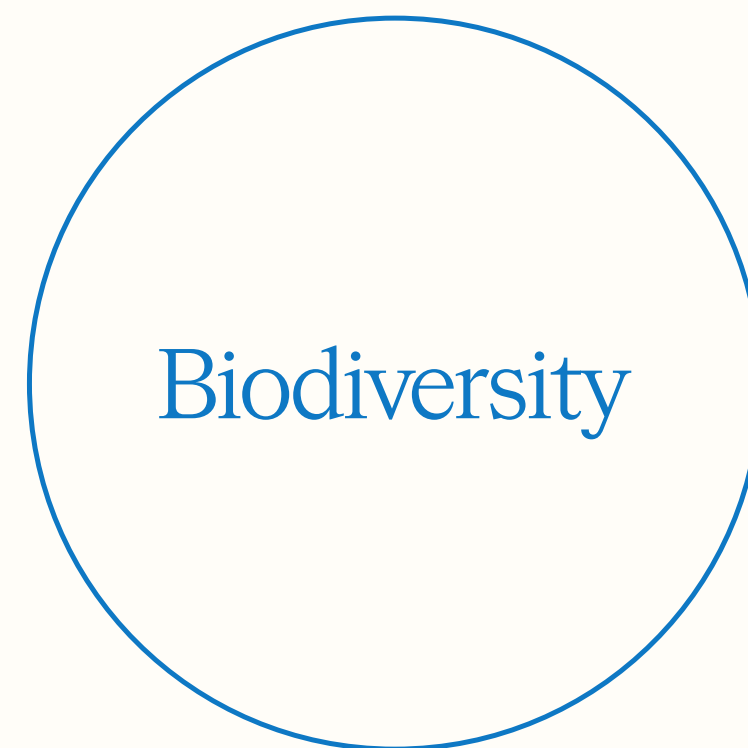
Climate

Climate  
Net increase in soil organic matter,  
GHG emission reduction at farm level,  
net zero carbon trajectory.



Water

Net reduction in water usage, water runoff management, contribution to SDG 9 – Industry Innovation & Infrastructure



Biodiversity

Increase in proportion of farmland that supports biodiversity, contribution to SDG 15 - Life On Land & SDG 14 - Life Below Water



Livelihoods

Optimum economic yield, poverty reduction, contribution to SDG 12 - Responsible Production and Consumption & SDG 10 - Reduced Inequalities



Community empowerment

Farmers are knowledgeable on ecosystem services, contribution to SDG 13 - Climate Action

# What indicators will we track to measure our progress

Regenerative principles	Indicators	Soil Health	Climate	Water	Biodiversity	Livelihoods	Community empowerment
Keep soil covered and minimize soil loss	Ground cover	+	+	+	+		
	Proportion of soil covered per year	+	+		+		
Minimize soil disturbance	Proportion of untilled cultivated land per year	+	+		+		
Maximize diversity of plants in rotation and in cover crops	Plant diversity	+	+	+	+	+	
Conserve and rejuvenate natural resources	Contaminated runoff water management	+		+		+	
	Water usage			+		+	
	Proportion of natural habitats on agricultural land	+	+	+	+	+	
Reduce and replace off-farm inputs	Reliance on Synthetic Inputs	+				+	
	Soil Nitrogen balance assessment						
Long term viability and livelihood benefits for farmers	Farm Revenues/Cost Model						+
	Farmer Knowledge of Ecosystem Services tied to Reg AG						+

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# Going Forward

We are expanding our cotton sourcing beyond organic and recycled to transitioning towards regenerative practices in cotton.

This year, we developed a deeper partnership with one of our key suppliers, Arvind, to help smallholder cotton farmers in India embark on their transition towards regenerative practices. Understanding the reality in the field and tracking regenerative indicators is a priority for us, in the year ahead. We also partner with PUR Project, an impact-driven organization focused on regenerative agriculture and nature-based solutions, to help us promote regenerative agriculture principles across our strategic raw materials supply chains.

For the time being, we are harnessing our efforts on regenerative cotton projects with a view of scaling these efforts beyond cotton to other agricultural systems, such as agroforestry (e.g. materials derived from forests such as rubber) and improved pasture management systems (for materials derived from the herding and management of animals such as wool).

# Circular Systems

We consider circular systems, like innovative materials, to be another tool to enable our Earth Positive mission. Current linear business models are resource intensive - meaning they take resources away from the planet without any net benefit or return. We need to shift our business models to reduce environmental harm by decoupling growth from resource consumption and pollution. By employing circular models, we want to minimize resource consumption, eliminate waste and extend the life of our products.

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# We are shifting to a system where we

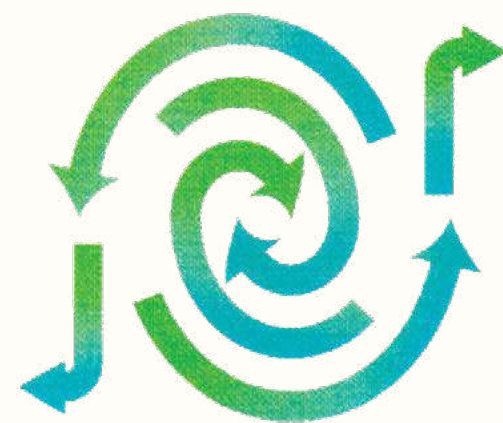
Regenerate  
natural systems

Design out  
waste  
and pollution

Keep products  
and materials  
in use

We are only at the beginning of our circular roadmap. So far, we have categorized some clear pathways and taken a few steps in circulating resources through recycled and waste-derived material compositions, as well as bread-crumbing circular traceability by embedding digital products passports in many of our collections.

Keep watching this space for more of our progress, which we will be moving forward on in 2022 and beyond.



## Circularity in practice

There are several paths we are exploring and our approach to circularity is currently focused on:

Circular  
Business  
Models

Clean  
Resources

Circular Design

Resource  
Efficiency

Resource  
Recovery

## Circular Business Models

Looking into future business models where we would offer Materials As A Service, such that we take responsibility for the maintenance, reuse, repair and ultimately recycling of our product. We're not there yet but watch this space!

## Clean Resources

Manufacturing products from non-toxic, renewable, recycled, and recyclable materials, or using processes that design waste out.

## Circular Design

Designing products for multiple uses, for easy repair and maintenance, and for easy disassembly once reuse or repair of the whole is no longer possible.

## Resource Recovery

More efficient ways to recover materials at the end of their first life and prepare them for a successful second (or third, or fourth) life.

## Resource efficiency

Producing more with less.

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# Circular ID

We're proud of this:

We tagged 14 out of our 30 collections with digital passports in 2021 and plan to expand our coverage beyond this in 2022

We have partnered with EON to create scannable QR digital passports onto our PANGAIA care labels that unlock a bespoke digital platform that shows you the journey of your product, accelerating our move towards greater transparency, traceability, and circularity. Think of it like a digital passport that unlocks everything you need to know about your product lifecycle—from how it is made, to its journey from us to you, aftercare tips, your direct environmental impact savings, and more. The digital passports will bring together all product-specific data into one place available at any time at the click of a button.

These digital passports will bridge the gap as we continue to explore wider circular solutions. Product digitization is fundamental to driving industry change and accelerating an Earth Positive future—one which gives back more than it takes. Throughout 2021 and 2022, we will be adding digital passports across new and existing product categories, with new lines being every month.

## Key progress markers

- Launched PANGAIA lab to scale breakthrough material innovations.
- Introduced 7 new materials and 3 finishes.
- Introduced our Preferred Materials List with 2% of our materials featuring 'Champion materials' and 21% of our materials being 'Runner Ups'.
- Conducted LCAs for 96% of our materials by volume.
- 83% of our products available online are Climate Positive.
- Laid foundations for our Regenerative Systems strategy.
- Started developing our Circularity roadmap.
- Partnered with EON and tagged 14 out of 30 collections with digital passports.

# Going forward

We are proud of the progress we have made in 2021 - we have focused on impact measurement, innovation launches, and systems scoping. As we look ahead to 2022, we are committed to delivering material science-led innovation while engaging meaningfully with the systems and supply chains we depend on. This means doubling down on our data collection and impact measurement, pushing our material mix, and leveraging data insights to inform innovation developments and impact reductions.

# Giving Back

01. Our Responsibility 02. Planet 03. People 04. Going forward 05. In Closing...

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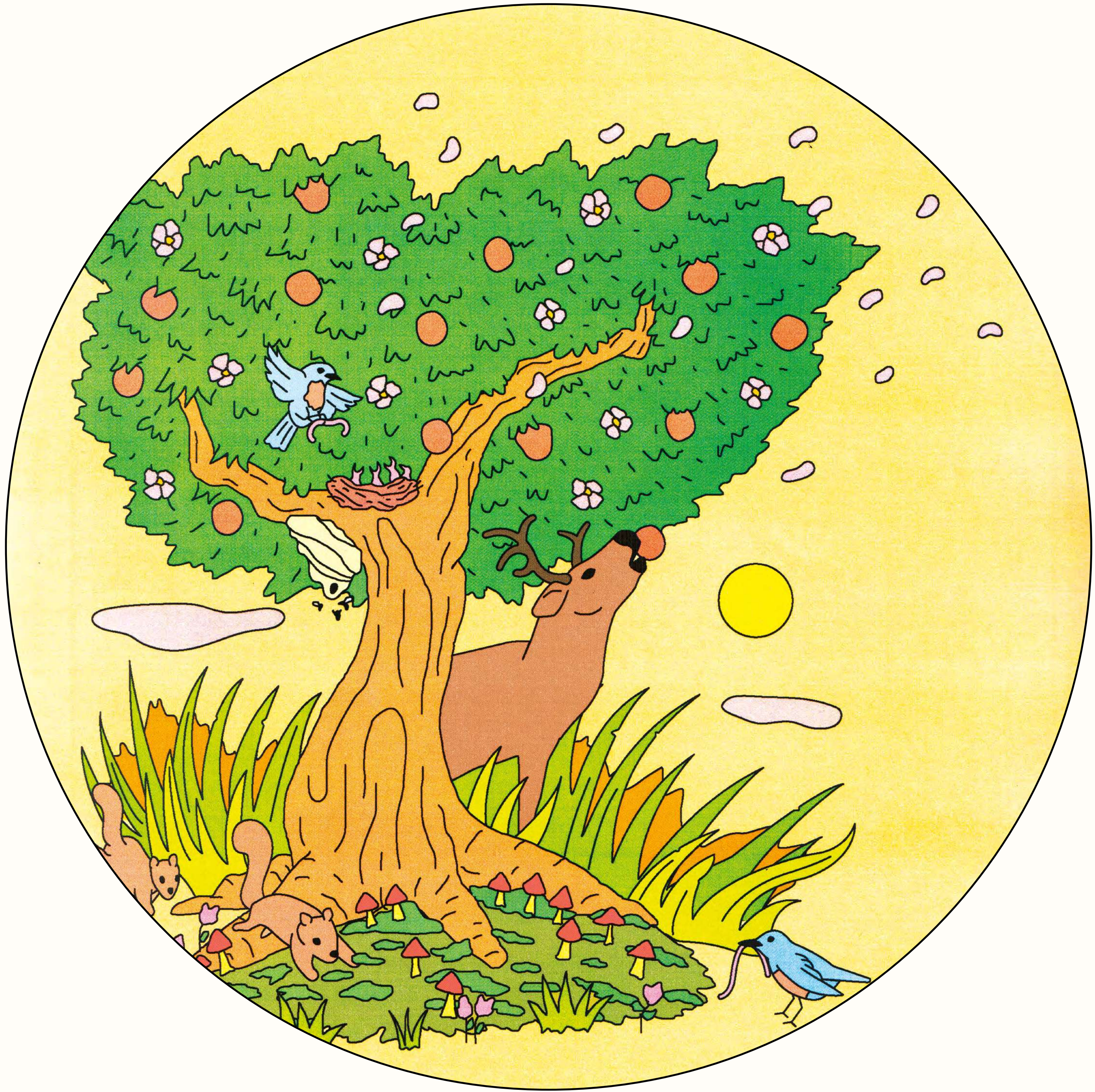
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Our Responsibility:  
giving back to nature  
and working to safeguard  
future generations

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At PANGAIA, we believe that building an Earth Positive future also means giving back to the communities around us. Philanthropy has been part of our approach since day 1 – we pledged to plant a mangrove tree for every product sold from the very start of our company.

We have since expanded our philanthropy efforts, developing 2 environmental funds of our own and providing regular donations and support to multiple causes and NGOs. Over the past year, we worked to establish a stronger philanthropy framework for ourselves and decided to build it around two pillars: planet and people.

We're proud of this:

In 2021, we donated over \$670,000 in total to environmental and social causes. We also provided PANGAIA products to frontline workers and vulnerable people, for a retail value of over \$1.8m.

# Planet



Focusing on Biodiversity



We support grassroots NGOs working in biodiversity protection and conservation through two funds we launched in partnership with Milkywire—Bee The Change and Tomorrow Tree.

# People



Focusing on the Next Generation



We engage with people-focused initiatives through the lens of supporting next generations, with the aim to reduce inequalities and empower young people around the globe.



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Image by Wade Million, Global Forest Generation.

# Planet

As a company, we recognize that biodiversity loss and climate change are inextricably linked, and that building an Earth Positive future requires us to address biodiversity decline. One of the ways we do this is through supporting conservation efforts led by scientists, biodiversity experts, and grassroots NGOs around the world. You can read more about other actions we are taking to support the health and prosperity of our natural systems in the Biodiversity section of the Planet chapter,

We engage with conservation initiatives and NGOs through two funds we have created in partnership with Milkywire: Tomorrow Tree and Bee The Change. Milkywire is a digital impact platform aiming to bridge the gap between donors and locally rooted nonprofit organizations. They empower the activists, scientists, and experts behind these organizations, providing them with stability through continuous funding. This supports meaningful change for both the environment and the local communities they work with.

## Choosing the right organizations

To create measurable and long-term impact, we work with Milkywire to select and vet beneficiary organizations for our 2 funds. The vetting process includes assessing governance, rights-based work, local community participation, methodologies, and results. All organizations have to meet Milkywire's eligibility criteria. We assess both the organization and the project for which the organization seeks funding. Milkywire also conducts interviews with the organization during the onboarding. Monitoring, evaluation, and learning is continuous work and all organizations have to send in reports on a regular basis so that we can follow how they spend the funds and the progress of the initiatives. Our aim is to build long-term partnerships with the organizations within our funds and provide them with steady financial support.

## Why grassroots?

Our decision to work with grassroots organizations stemmed from an understanding of the intersectionality of these initiatives. Forests are complex ecosystems with multiple benefits for climate, biodiversity, and society. They play a significant role in reducing the risk of natural disasters like floods, droughts, landslides, and other extreme weather events. Forests mitigate climate change globally, contribute to the balance of oxygen, carbon dioxide, and humidity in the air, and protect watersheds. Furthermore, they provide habitats for a variety of species and livelihoods for more than 1.6 billion forest-dependent people all over the world<sup>1</sup>.

We believe it is important to not only plant new forests but nurture the existing and degraded forests. By primarily planting native species we ensure that forests keep delivering a wide array of ecosystem services and not bring negative contributions for local water cycles and biodiversity, as well as being well adapted to survive in local conditions. By focusing on locally rooted initiatives where the communities are involved in the development and implementation of the project, we ensure ecological sustainability and that long-term effects are more secure and rights are being met. Indigenous people represent under 5% of the global population, and yet they are managing or holding tenure over 25% of the world's land surface and supporting about 80% of global biodiversity<sup>2</sup>.

We recognize that they are the custodians of our biodiverse landscapes and believe the best way for us to support nature protection is by working collaboratively with these communities and supporting their conservation initiatives.





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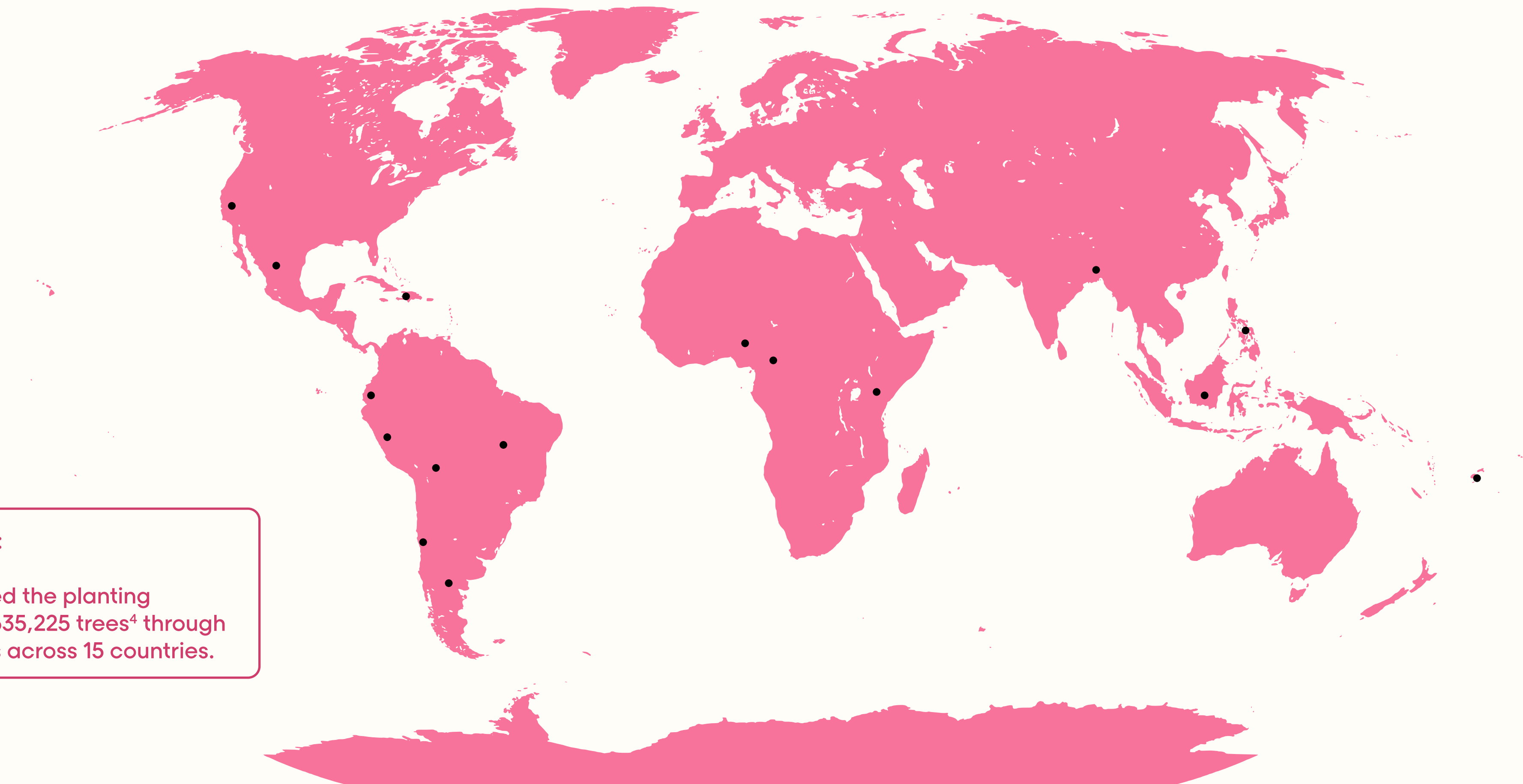
We're proud of this:

The Bee The Change and Tomorrow Tree funds are not part of our **offsetting** strategy, but rather an additional contribution we make in an effort to build an Earth Positive future.

# Tomorrow Tree fund

We launched the Tomorrow Tree fund at the end of 2020 to expand our tree planting efforts into a more holistic approach, with the aim to keep supporting reforestation initiatives but also cover the conservation and protection of forests.

We are also members of the [1t.org<sup>3</sup>](#) community and as such, have pledged to plant, protect, and restore 1 million trees through the Tomorrow Tree fund.



We're proud of this:

This year, we funded the planting and protection of 635,225 trees<sup>4</sup> through 11 grassroots NGOs across 15 countries.



Organizations and Locations	Number of Trees planted
HAKA (Indonesia)	41,750
The Society for Preservation of Muriqui (Brazil)	12,384
FoProBim (Haiti)	28,742
Arbio Peru (Peru)	24,934
Niger Delta Forest Project (Nigeria)	27,419
Mangrove Action Project (Mexico, Fiji, Philippines)	19,569
ProPurus (Peru)	7,420
GFG/ECOAN (The Andes: Peru, Argentina, Chile, Ecuador, Bolivia)	277,778
Ecological Balance (Cameroon)	5,229
Bangladesh Environment and Development Society (Bangladesh)	40,000
SeaTrees (Kenya, Indonesia, California)	150,000

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# Our Tomorrow Tree fund currently supports the following 11 organizations:

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## SeaTrees (Kenya, Indonesia, California)

PANGAIA's very first tree-planting partner, SeaTrees funds initiatives that support local communities working to restore coastal ecosystems across mangroves, kelp and coral.

Note: While SeaTrees is a beneficiary of the Tomorrow Tree Fund, it is not part of the Milkywire platform and network.

**2021 highlight:** 150,000 mangroves planted in Mida Creek, Kenya - see more details in the case study below!

## Global Forest Generation (Peru, Argentina, Chile, Ecuador, Bolivia)

Global Forest Generation's Acción Andina regional initiative protects and restores one million hectares of high-Andean native forests – replicating and scaling up a successful community-based reforestation model that has resulted in the planting of over 3 million native trees.

**2021 highlight:** Built and maintained plant nurseries, trained on-the-ground restoration leaders and nursery workers.

## HAKA – Forest, Nature and Environment of Aceh (Indonesia)

HAKA founder Farwiza Farhan is an award-winning Forest Conservationist, taking on the fight against illegal palm oil plantations and the unsustainable exploitation of the Indonesian rainforest and its wildlife.

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**2021 highlight:** Supported the Lesten village community to access Village Forest Permit from the Ministry of Forestry, allowing the community of Lesten to sustainably manage the forest around the village.

## FoProBiM (Haiti)

Focuses on restoring and conserving mangrove forests throughout Haiti as they are critical to protecting local communities against the impact of storms. FoProBiM also provides training to local communities in activities such as apiculture and eco-tourism.

**2021 highlight:** 2 mangrove nurseries developed, 40,000 mangrove plants prepared in nurseries and out-planted to reforestation sites, 1,010km of bamboo and barbed wire fencing put in place to keep animals (goats and cows) out of the reforested areas, and 60 individuals have participated in activities (collecting seeds, making biodegradable baskets, collecting seeds, preparing the mangrove nurseries, out-planting).

## Arbio Peru (Peru)

Collects data on Shihuahuaco trees, which are at risk of logging, and also on the extensive wildlife found in the region. They maintain a permanent presence of rangers to protect the trees from illegal logging and drive community outreach programs to promote important Amazon conservation work.

**2021 highlight:** An expedition to the rainforest with 2 nature photographers, a training for their park ranger team in Puerto Maldonado for the use of monitor tools for deforestation warning. Improvement in equipment, including a new motor for the boat and a new electric generator for the base camp.

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## SW Niger Delta Forest Project (Nigeria)

Works to provide and implement conservation solutions that will enhance the survival of threatened species and forest habitats in southwestern Nigeria. One of the organization's main focuses is to save and protect the vulnerable chimpanzee population by enhancing the chimpanzees' status amongst local communities and decision-makers.

**2021 highlight.** Rangers equipped for effective surveillance and patrol of the conservation area, established conservation education programs in primary and secondary schools in local communities. As a result, they eradicated all forms of entrenched threats in the conservation area, particularly posed by marijuana planters clearing vast areas of forests to grow marijuana.

## Mangrove Action Project (Fiji, Philippines, Mexico)

Works to protect and restore mangrove forests worldwide by educating and training local community conservation groups, NGOs, and government staff on how to restore and maintain fragile mangrove ecosystems that have been lost, degraded, or damaged by using natural regeneration methods.

**2021 highlight.** Online training adapted for Fiji and Small Island Pacific States for 30 staff members of local conservation organizations to improve restoration efforts at their sites, and online training offered to local NGOs and community associations in the Philippines. As a result, stakeholders adapted their restoration plans and created priority sites after assessment of the physical conditions of abandoned shrimp ponds.

## ProPurús (Peru, Brazil)

Dedicated to the conservation of forests, the sustainable use of natural resources, and the promotion of the balanced development of the indigenous peoples of the Peruvian jungle. An important part of the work of ProPurús is focused on the protection of the people in isolation that live in the border area of Peru and Brazil.

**2021 highlight:** Helped with the donation of tools to the Indigenous communities to build organic gardens to strengthen their food sovereignty.

## Ecological Balance (Cameroon)

Ecological Balance works to reduce illegal logging and replant deforested areas with native trees. By combining education and participation with active restoration efforts, they want to bring the benefits and value of forest back into the everyday life of the people of the Mt Cameroon forest landscape.

**2021 highlight.** Collected seeds for the tree nursery and planted them to make seedlings to plant out, clean up activities on World Clean Up Day including collecting waste from the forests.

## Bangladesh Environment and Development Society (BEDS) (Bangladesh)

BEDS works to restore degraded mangrove forest areas, destroyed due to human activities and climate change impacts. They create mangrove buffer zones, which will not only protect the coastal households but also assist to improve their livelihoods, as well as contributing to carbon sequestration and biodiversity conservation.

**2021 highlight.** Approximately 100,000 better-rooting saplings are available for mangrove plantation, which will create mangrove-based livelihoods in the long run.

# Case study: A closer look at Mangroves

Mangroves act as nurseries for aquatic organisms, habitats for birds, and as shields against physical damage of shorelines due to tidal waves, erosion, hurricanes, and tsunamis. Their role in supporting vital ecosystems is broad and fundamental.

Oceans are the planet's biggest carbon sinks, and mangroves protect their health. Since the 1980s over 35% of the world's mangroves have been lost due to human activities including development, agriculture, and deforestation<sup>5</sup>.

#### Did you know?

Mangrove forests can sequester up to 4 times more CO<sub>2</sub> than tropical rainforests<sup>6</sup>. A mangrove tree can sequester around 300kg of carbon emissions over its lifetime<sup>7</sup>. The conservation, restoration, and improved management of tropical forests, mangroves, and peatlands could provide 23% of cost-effective mitigation action needed by 2030 to limit global warming to 2°C<sup>8</sup>.

# We're working with SeaTrees to help restore a mangrove forest in Mida Creek, Kenya

We are supporting SeaTrees and their partner organization in Kenya COBEC to restore 100+ hectares of degraded mangrove forest within the Malindi Watamu National Marine Park and Reserve—a UNESCO Designated Biosphere Area and one of the world's oldest Marine Protected Areas. Mida Creek is approximately 140 km north of Mombasa, Kenya's second-largest city. The creek covers an area of 32 km<sup>2</sup>.



Image by Tiphaine Marie Pittet, PANGAIA

## What is happening in Mida Creek?

Mangrove trees have been illegally harvested for lumber and charcoal production, due to local economic pressures.

## Why does it matter?

Mida Creek supports the surrounding local communities—providing food, revenue from tourism, and protection from storm surges and sea level rise. From a biodiversity perspective—the area is a critical stopover for migratory birds, as well as home to sea turtle habitat and nesting areas, is used as a nursing ground for humpback whales, and has a large resident population of Indo-Pacific bottlenose dolphins.

## How we're helping?

SeaTrees and COBEC support 20 community-led planting initiatives in the Mida Creek area, directly impacting over 200 people. The income generated by mangrove planting allows members of the local community to buy food, pay for their children to attend school, and develop other projects to ensure long-term revenue for their communities. In 2021, we worked with SeaTrees to fund the planting of 150,000 mangrove trees in the Mida Creek area.



Image by Tiphaine Marie Pittet, PANGAIA

# Bee The Change fund

We launched the Bee The Change fund on World Bee Day 2020, with the aim to raise awareness of the importance of pollinators and support grassroots NGOs working to preserve them. Pollinators are crucial for the balance and health of ecosystems around the world.

## Vital for the survival of people

1 in 3

Spoonfuls of food relies on bees

\$250 billion

Global economic value of pollinators

80%

of worldwide pollination is performed by bees

£1.8 billion

Estimated cost per year if farmers in the UK had to perform pollination by hand

4,000 m<sup>2</sup>

of trees are pollinated by just one bee colony



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## Vital for the balance of our planet

17 times

Insects are the most varied and abundant species, outweighing humanity by 17 times

8x

Rate of extinction of insects is 8x faster than that of mammals, birds and reptiles

40%

of insect species are declining

1/3

of insect species are endangered

20,000

Bee species worldwide, most of which are solitary



# Our Bee The Change fund currently supports 4 grassroots organizations:

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## Buglife (United Kingdom)

Buglife's B-Lines project helps pollinators, including bees, to move across the UK by creating a network of insect pathways. Most pollinators are confined to isolated habitat areas, and an estimated 40-70% of species could go extinct if action is not taken.

**2021 highlight:** Delivery of 'B-Lines: Insect Superhighways' online conference, which attracted over 900 registrations from landowners, farmers, local authority representatives, MPs and ecologists.

## Nordens Ark (Sweden)

Nordens Ark's Tag a Bee project aims to tag 5000 bees in Sweden with RFID chips (radio-frequency identification) to learn how, when, and where they fly to collect pollen, which can then better inform the protection and preservation of both domestic and wild bees.

**2021 highlight:** Planned and designed 100 sowing and planting sites.

We're proud of this:

In 2021 we donated over \$30,000 from our retail partnerships, pop-ups and internal sample sales to our Bee The Change fund.

## Bumblebee Conservation Trust (United Kingdom)

The Short-haired Bumblebee Reintroduction project is reintroducing this bee species to the UK by working with farmers, conservation groups, and other landowners to create flower-rich habitats within the release area. The species was last recorded in 1988 and declared extinct in 2000.

**2021 highlight:** Recruited an additional 24 volunteers who are undertaking bumblebee surveys and a further 18 land owners who have been given bespoke advice to increase flower rich habitat for bumblebees and other pollinators.

## Milgis Trust (Kenya)

Milgis Trust runs a beekeeping program together with indigenous groups in Northern Kenya. They use sustainable beekeeping methods and develop marketable products to enhance the beekeepers' livelihood.

**2021 highlight:** Remaining equipment delivered for hive production season and practical training for beekeepers for the next stage of hive management, including honey extraction undertaken.

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Image by Digby Douglas-Dufresne, Milkywire.

# People

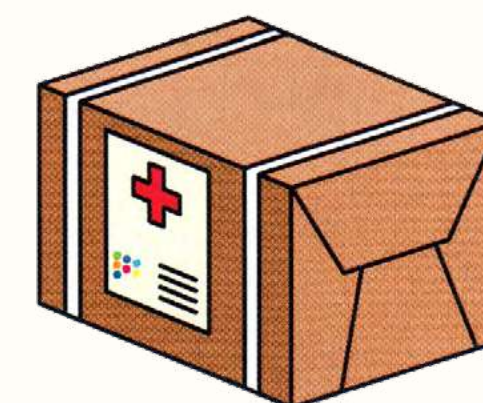


We engage with people-focused initiatives through the lens of supporting next generations, with the aim to reduce inequalities and empower young people around the globe.

In 2021 we donated over \$50,000 towards social justice initiatives, supporting causes including racial justice and LGBTQIA+ rights. We also provided PANGAIA products to frontline workers, young people, and environmental NGOs for a total retail value of over \$1.8m.

Whenever possible, we aim to respond to global emergencies by working with NGOs that provide emergency aid and relief on the ground.

We also work closely with our People team to engage our internal team with these causes and initiatives – organizing talks, fundraisers and events on a regular basis.



### March

We supported the Stop Asian Hate movement by donating to Stop AAPI Hate and End the Virus of Racism.

We raised funds to support and empower refugee women in partnership with Choose Love, through sales of an upcycled collection in honor of International Women’s Day.

### April

We raised funds through an internal sample sale to support Doctors Without Borders in their Covid-19 relief efforts.

### June

PANGAIA employees took part in the 5k Run for Heroes, raising funds for Doctors Without Borders.

We celebrated Pride through a series of internal events and talks, as well as donations to AKT and True Colors United.

We donated to Black Lives Matter, NAACP, and Color of Change in observance of Juneteenth.

To celebrate World Oceans Day and in partnership with Milkywire, we raised funds through product sales to support Michael Mwang’ombe, a Kenyan researcher working in ocean conservation.

### September

Through our partnership with artist and skateboarder Haroshi, we raised funds and donated to Make Life Skate Life and Wonders of the World, supporting their efforts to make skateboarding more accessible.

### October

For UK Black History Month, we donated to Black Lives Matter, and Black Minds Matter to support racial justice and equality.

### December

We sent surprise gift boxes filled with PANGAIA products to over 10,000 medical frontline workers in the UK, the US, Italy, and Portugal, as well as to environmental NGOs and young people.

# Going forward

Our intention for the year ahead is to keep supporting the NGOs within our network, as well as increase awareness of these important causes among our community and beyond.

We are exploring how we can put our platform to use to elevate some of these initiatives. As an example, we are currently working on a public-facing campaign on the importance of biodiversity and the actions needed to protect it. We are not ready to share this yet but hopefully will be in a few months!

We are also looking to increase the scope of our work towards supporting climate justice projects. We recognize that climate justice is an ever-growing issue that will need to be addressed at every level of society and we aim to develop stronger partnerships with NGOs operating in that sphere.

Finally, in an effort to engage our team with our philanthropic initiatives even further, we aim to implement a volunteering program as well as increase impact-focused internal activations.



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Image by Wade Million, Global Forest Generation.

# In Closing...

PANGAIA is on an ongoing journey of reflection, discovery, and action. We are dedicated to our goal of becoming an Earth Positive business and designing a better future.

“The age of humans, the Anthropocene, calls for a new rational optimism. We know that what we do today will inevitably change our tomorrow, and we believe in the collective power of people to shape the future we all want. A future in balance with nature, for our planet and its people. We want to make this future possible. To bring together the most brilliant minds and to allow science and innovation to guide our purpose.” - PANGAIA Collective

In the last 2 years, we made significant strides towards this north star, but we still have a long way to go. We are committed to progress and to contributing to a more responsible fashion industry by making problem-solving innovations accessible to the world.

# An Open Invitation

We are rooted in collaboration and we welcome others to join us on this mission. We invite all brands, institutions, academics, innovators, and educators to talk to us about these challenges and join us in amplifying and scaling solutions. So please get in touch.



# Glossary

Term	Definition	Source
Life Cycle Assessment	A Life Cycle Assessment is a cradle-to-grave or cradle-to-cradle analysis technique to assess environmental impacts associated with all the stages of a product's life, which is from raw material extraction through materials processing, manufacture, distribution, and use.	<a href="https://www.sciencedirect.com/science/article/pii/B9780128119891000051">https://www.sciencedirect.com/science/article/pii/B9780128119891000051</a>
Anthropogenic	Caused by humans and their activities.	<a href="https://dictionary.cambridge.org/dictionary/english/anthropogenic">https://dictionary.cambridge.org/dictionary/english/anthropogenic</a>
Resilient	The capacity to resist and recover quickly from supply chain disruptions.	
Earth Positive	Both a goal and a philosophy, we are building a business that creates value while elevating human, animal, and plant quality of life, bringing us in harmony with nature and giving back more than we take.	
IPCC Report	The Intergovernmental Panel on Climate Change is a United Nations body that publishes an annual report on the science relating to climate change.	<a href="https://www.ipcc.ch/">https://www.ipcc.ch/</a>
COP26	The Conference of the Parties (COP) conference is the 26th and most recent United Nations climate change conference that took place in Glasgow in 2021.	<a href="https://www.nationalgrid.com/responsibility/environment/cop26">https://www.nationalgrid.com/responsibility/environment/cop26</a>
Carbon budget	A carbon budget is the maximum amount of greenhouse gases that a company or country can emit in a certain period of time.	
Baseline year	The reference point in time against which future emission reductions are measured against.	

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Term	Definition	Source
Greenhouse gas (GHG)	A group of gasses contributing to global warming and climate change. There are currently seven greenhouse gasses covered by The Kyoto Protocol: the non-fluorinated gasses: carbon dioxide (CO <sub>2</sub> ), methane (CH <sub>4</sub> ), nitrous oxide (N <sub>2</sub> O) and the fluorinated gasses: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF <sub>6</sub> ) and nitrogen trifluoride (NF <sub>3</sub> ). Converting them to carbon dioxide (or CO <sub>2</sub> ) equivalents makes it possible to compare them and to determine their individual and total contributions to global warming.	<a href="https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Greenhouse_gas_(GHG)">https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Greenhouse_gas_(GHG)</a>
Water stress	The inability to meet human or ecological demand for freshwater.	<a href="https://waterriskfilter.org/">https://waterriskfilter.org/</a>
Water scarcity	The lack of freshwater resources due to human water consumption.	<a href="https://waterriskfilter.org/">https://waterriskfilter.org/</a>

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Term	Definition	Source
Intersectional environmentalism	An inclusive form of environmentalism that advocates for the protection of all people and the planet. It identifies the ways in which injustices affecting marginalized communities and Mother Earth are interconnected.	<a href="https://www.intersectionalenvironmentalist.com/about-ie">https://www.intersectionalenvironmentalist.com/about-ie</a>
Value chain	The value chain comprises all business activities which increase the value of a product or service in the eyes of the buyer. It follows then, that the value chain tends to be traced in the opposite direction to the supply chain.	<a href="https://www.supplychainsecrets.com/the-supply-chain-and-the-value-chain-the-same-but-different/">https://www.supplychainsecrets.com/the-supply-chain-and-the-value-chain-the-same-but-different/</a>
Supply chain	The system of people and things that are involved in getting a product from the place where it is made to the person who buys it.	<a href="https://dictionary.cambridge.org/dictionary/english/supply-chain">https://dictionary.cambridge.org/dictionary/english/supply-chain</a>
Collective bargaining	All negotiations which take place between an employer, a group of employers or one or more employers' organizations, on the one hand, and one or more workers' organizations, on the other to determine working conditions and regulate employer/worker relations.	<a href="https://www.ilo.org/global/topics/collective-bargaining-labour-relations/WCMS_244362/lang--en/index.htm">https://www.ilo.org/global/topics/collective-bargaining-labour-relations/WCMS_244362/lang--en/index.htm</a>
Vendor Manual	PANGAIA's central document that gives partners clear instructions on how we work and the processes they need to complete to be onboarded, it includes key policies and guidance.	
Fair Labor Association	An internationally recognized code of good labor practice. It is founded on the conventions of the International Labor Organization (ILO). PANGAIA's Code of Conduct is based on the core ETI principles.	<a href="https://www.ethicaltrade.org/sites/default/files/shared_resources/ETI%20Base%20Code%20%28English%29.pdf">https://www.ethicaltrade.org/sites/default/files/shared_resources/ETI%20Base%20Code%20%28English%29.pdf</a>

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Term	Definition	Source
Third-party social audit	The detailed standards to which it holds its supplier(s) accountable.	
Code of Conduct	A collaborative effort of socially responsible companies, colleges, universities, and civil society organizations working towards solutions for abusive labor practices through tools, resources, training, due diligence, and independent assessments.	<a href="https://pangaia.com/pages/supplier-code-of-conduct?_gl=1*1w9jqzk*_ga*NTY0NjAxMjY5LjE2ND-Q4MzQ0MDM.*_ga_DC35J2X53F*M-TY0Nzk2MTM5Ny4yMS4xLjE2NDc-5NjE0MDkuNDg">https://pangaia.com/pages/supplier-code-of-conduct?_gl=1*1w9jqzk*_ga*NTY0NjAxMjY5LjE2ND-Q4MzQ0MDM.*_ga_DC35J2X53F*M-TY0Nzk2MTM5Ny4yMS4xLjE2NDc-5NjE0MDkuNDg</a>
Ethical Trading Initiative (ETI) Base Code	An internationally recognized code of good labor practice. It is founded on the conventions of the International Labor Organization (ILO). PANGAIA's Code of Conduct is based on the core ETI principles.	<a href="https://www.ethicaltrade.org/sites/default/files/shared_resources/ETI%20Base%20Code%20%28English%29.pdf">https://www.ethicaltrade.org/sites/default/files/shared_resources/ETI%20Base%20Code%20%28English%29.pdf</a>
Transparency Pledge	The Apparel and Footwear Supply Chain Transparency Pledge was created in 2016 by a coalition of human rights and labor rights organizations as a common minimum standard of supply chain disclosure.	<a href="https://transparencypledge.org/#menu">https://transparencypledge.org/#menu</a>
DEI Council	The DEI council is a rotating independent, objective working committee that advances PANGAIA's culture and DEI initiatives by working on business/cultural challenges that are incorporated into PANGAIA's operations.	

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Term	Definition	Source
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Hotspots	Specific ESG activity that occurs across the supply chain and provides insights for impact and action.	
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Term	Definition	Source
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Offsetting (re. carbon)	Any activity that compensates for the emission of carbon dioxide (CO <sub>2</sub> ) or other greenhouse gasses (measured in carbon dioxide equivalents [CO <sub>2</sub> e]) by providing for an emission reduction elsewhere.	<a href="https://www.britannica.com/technology/carbon-offset">https://www.britannica.com/technology/carbon-offset</a>
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1t.org (Trillion Trees)	The Trillion Trees Initiative is a global community of stewards that protect and restore forests all over the world – for the benefit of people, nature, and the climate	<a href="https://trilliontrees.org/">https://trilliontrees.org/</a>
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Peatlands	Terrestrial wetland ecosystems in which waterlogged conditions prevent plant material from fully decomposing. Consequently, the production of organic matter exceeds its decomposition, which results in a net accumulation of peat.	<a href="https://peatlands.org/peatlands/what-are-peatlands/">https://peatlands.org/peatlands/what-are-peatlands/</a>
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