“Every element of what we wear comes from nature”
Professor Dilys Williams, Director of Centre for Sustainable Fashion, UAL

Fashion Values Nature Guide: Key Learnings from Year 1
Foreword

Once you know, you can no longer not know. We know, unequivocally, that most fashion ‘sense’ demonstrates an absence of care, of ourselves, each other, and our only home, on Earth. Our ways of designing, making, wearing, and maintaining fashion is a visual cue of modernity, based on extractive consumerism. Fashion is our relationship with nature writ large. The Living Nature crisis arises out of a blind spot in modern life, of placing financial economy over nature’s ecology, and applying technology to the pursuit of increasing overall consumption, using the myth of efficiency to reduce harm; a myth there is no evidence to uphold.

As creative educators, researchers, luxury Maisons, communication designers, and technology professionals, the Fashion Values partners have come together to consider how best to apply our skills in serving the needs of Living Nature, and thereby our own. We believe that creative imagining, ecological thinking, and access to credible knowledge, from a wide range of sources, can create a movement from an Age of Extraction to an Age of Regeneration.

Fashion Values has been created through a long-standing partnership of trust and commitment to fashion being a means to live well together, as humans, in a more than human world. We recognise that our connections represent tensions between the success measures that late capitalism still relies upon, and measures of wellbeing that are still being established. Measures that include planetary, societal, and personal prosperity.

Through rigor and multidisciplinary collaboration in our research, we have developed credible knowledge and resources, and a flexible and adaptable education system, suited to a range of levels, locations, and life stages. Fashion Values nurtures well-informed design that can be recognised and supported. To ensure that we are working towards a de-carbonised, de-centred, de-colonised fashion system, the partners connect the intelligence from their own roles, with that of a group of advocates and advisors, from as wide a range of perspectives as possible.

We invite all those involved in fashion, as a discipline, livelihood and a means for connection and self-expression, to respond to the question ‘how can fashion value nature?’ We invite you all to reflect on the findings in this guide, to learn with others on the Fashion Values platform and to use our creative minds to demonstrate that a regenerative fashion system is not only possible, but desirable. We need to apply our imaginations and to have credible, relevant, diverse sources of knowledge, to thrive as a species. The insights in this guide are for academics, design students, activists, start-ups, brands – micro and large – CEOs, NGOs, and so many others, to invert economy-centred fashion to ecologically-centred fashion products, services, and systems.

As this guide sets out: another fashion system is possible. There is much to be done to make it a reality. We look forward to hearing from you about how you bring the guide to life.

Dilys Williams
Professor of Fashion, Design, Sustainability, and Director of Centre for Sustainable Fashion, UAL
Fashion Values is an educational programme ideated and developed by Centre for Sustainable Fashion (CSF), London College of Fashion (LCF), University of the Arts London (UAL), in partnership with Kering, Vogue Business, and IBM. It aims to enable the next generation of fashion designers, strategists, and communicators to create sustainably; to empower imagination, innovation and consciousness through sustainability leadership and powerful media narrative; and to make education and learning globally informed, interdisciplinary, and accessible through cross-cultural relevance and location-specific application.

In 2021, the first year of the Fashion Values Nature programme consisted of the following activities:

**The Challenge**
A global call-out for innovations in fashion design, media and technology. The Challenge was open to learners from across the globe who had the opportunity to respond to the briefs defined by the Roundtable experts.

**The Roundtable**
A closed-door event convening the Fashion Values network to determine a Challenge to support innovation in sustainability. The Roundtable brought together a coalition of voices from across academia, fashion, media and tech to identify a set of briefs in relation to the year’s central sustainability theme.

**The Hack**
An online event in support of the Challenge briefs, which helped prospective applicants to refine ideas and hear what the Fashion Values core partners wanted to see from their submissions.

**The Platform**
The digital home of Fashion Values. The Platform, developed by IBM, is an online space for sharing transformational ideas and inspirational content that focuses on the year’s sustainability theme. It hosts educational resources to support engagement and understanding of the topics explored through the programme.

**The Insights**
A guide profiling signals of change and the outcomes of the programme activities. The Insights act as a way for Fashion Values to amplify learnings beyond the programme itself, highlighting opportunities for change to the wider fashion system and showcasing transformational responses to the Challenge.
IBM is an open-hybrid Cloud and Artificial Intelligence (AI) company. As the technology partner of the Fashion Values programme, IBM will give students access to technology and innovation to guide the industry to adopt more sustainable practices. Specifically, IBM thought leaders will share their experience and insights on the role that technologies such as AI, blockchain and cloud can play in helping the fashion industry become more sustainable. IBM will transform the digital technology which powers the cornerstone of the partnership; a new, globally relevant, interactive education experience platform.

Centre for Sustainable Fashion, UAL
Centre for Sustainable Fashion (CSF) is a University of the Arts London research, education, and knowledge exchange centre. Based at London College of Fashion (LCF), the Centre provokes, challenges and questions the status quo in fashion to contribute to a system that recognises its ecological context and honours equity. CSF shapes and contributes to Fashion Design for Sustainability as a field of study, industry practices, and educational models. By exploring and cross-referencing fashion's relational ecological, social, economic and cultural agendas, the Centre engages in transformational design practices, CSF takes a pluralistic, systemic approach, collaborating across its network of universities, businesses and other organisations from all around the world.

Kering
A global luxury group, Kering manages the development of a series of renowned houses in Fashion, Leather Goods, Jewelry: Gucci, Saint Laurent, Bottega Veneta, Balenciaga, Alexander McQueen, Boucheron, Pomellato, DoDo, Qeelin, as well as Kering Eyewear. By placing creativity at the heart of its strategy, Kering enables its Houses to set new limits in terms of their creative expression while crafting tomorrow’s Luxury in a sustainable and responsible way. Kering captures these benefits in its signature: “Empowering Imagination”.

Vogue Business
Vogue Business is an online fashion industry publication launched in 2019. Headquartered at Condé Nast in London, the title offers a truly global perspective on the fashion industry, drawing on insights from Condé Nast’s network of journalists and business leaders in 32 markets to empower fashion professionals to make better business decisions. Vogue Business subscribers receive a thrice-weekly newsletter as well as weekly Technology and Sustainability Edit briefings. Senior sustainability editor Rachel Cemarsky leads the sustainability coverage.
Executive Summary

This document presents key learnings from the first year of the Fashion Values programme, ideated and developed by Centre for Sustainable Fashion (CSF) in partnership with Kering, Vogue Business, and IBM. This Fashion Values Nature guide shows how the programme has met the aim to enable the next generation of fashion designers, strategists, and communicators to create sustainably, to empower imagination, innovation, and consciousness, and to make education and learning globally informed, interdisciplinary, and accessible. This document reports on the first year of the programme that, in 2021, focused on Fashion Values Nature. It highlights the relationship between fashion and Living Nature, as well as the challenges and opportunities for fashion to respect, protect, and regenerate nature.

This document is conceived as a guide for academics, design students, start-ups, brands, activists, and NGOs. It provides a set of referencing tools to guide a shift from an age of extraction to an age of regeneration, to be enabled by fashion products, services, and systems. The document shares key findings from primary and secondary research, as well as insights gathered throughout a participatory design process, consisting of a roundtable with experts, a challenge brief, a hack, and an educational online platform.

The guide argues for the need to put nature first, advocates for radical and systemic change, and points towards solutions and innovations that address root causes. It highlights several opportunities for fashion to value Living Nature, for instance through regenerative farming, diversifying the fibre basket, animal conservation and economic incentives, sustainable manufacturing practices, impact assessment on key species and ecosystems, traceability and transparency, certifications, sustainable business strategies, collaborations and policy engagement. The guide also discusses key challenges for fashion’s relationship with Living Nature, such as overproduction, consumerism, lack of regulations, shortage of R&D investment, greenwashing, lack of understanding, conflicting agendas, negative perceptions, material costs, and short-term thinking. The guide also highlights the need to create positive change through interventions that consider the complexity of biodiversity, that are grounded on a connection and interdependence between fashion and Living Nature, and are developed through multidisciplinary collaboration.

The guide showcases the finalists and winners of the Fashion Values Challenge, transformative ideas that address different ways for fashion to value nature, through design, media, and technology. Supported by educational resources and engaging with a global community of learner through an online platform, the Challenge respondents adopted design thinking, and focused on the entire fashion sector, from design, to media, to technology. Signals for changing the wider fashion industry can be found in the finalists’ submissions, which are intended to restore Living Nature through fashion rather than fixing symptoms or addressing superficial problems. Such sustainability innovations are not easy to classify as they thread elements of products, services, and systems; they are inclusive and holistic, and based on a change in behaviours and mindsets around sustainability.

As highlighted in this guide, the Challenge winners point towards design approaches that learn from nature, that contribute to business innovation, to economic – as well as environmental, social, and cultural – impact, that leave a long-lasting legacy, and are communicated in compelling ways. Finally, this guide includes a call to action for the entire fashion system to shift from an age of extraction to an age of regeneration.
Introduction

Nature is the life force that provides us with the air, water, soil and other life forms that make up the elements that come together in the garments in which each one of us is clad. The relationship between fashion and nature is dependent on how these elements are valued in emotional, cultural, political, social, and economic as well as aesthetic and technical terms.

Whilst the symptoms of an undervaluing of nature by fashion are well known and widely discussed, the underlying principles of living nature are not well articulated in the studios, workrooms, boardrooms, tutorial spaces and sample rooms of fashion.

The value of living nature is priceless, but in contemporary Western terms, natural capital and biodiversity are valued $125 \text{ USD trillion} \text{ year}^{-1}$. This implies an economic system where 'value' is mostly referred to as being measurable in monetary terms. Instead, the Fashion Values programme considers both the intrinsic and extrinsic properties of fashion, and suggests that different types of value (economic, social, cultural, and environmental) can be co-created through various practices of designing, making, buying, wearing and engaging with clothes.

Moving beyond merely economic concerns, the title of the programme also plays with the word 'values', meaning principles of belief, or people’s judgements of what is important in life. Therefore, Fashion Values points towards various ways in which fashion can generate value, for nature, society, culture, and the economy.

With this in mind, Fashion Values was conceived as a programme of education, research and incubation that in its first year focused on answering the following question:

**How can fashion respond to this challenge? How can fashion truly value nature?**

This document showcases the outcomes of the first year of Fashion Values with a focus on Nature, profiling innovation and signals of change gathered throughout the programme’s activities. By highlighting opportunities for change to our readers and to the wider fashion system, the partners look to amplify learnings beyond the programme and inspire industry-wide action.
1. Key Insights

1. We need to put nature first.
   When nature is prioritised above all, everything else falls into place. This insight gives us a goal to work towards: a nature-centric fashion industry, with a supporting value system that prioritises Living Nature over profit, growth, creativity, or any other traditional success measure. It provides us with a critical framework for strategy-building, and from a shorter-term perspective it offers a provocation for everyday decision-making.

2. We need radical and systemic change.
   Changing the way in which we design and make clothing is not enough to avert our ecological crises. Our current perspectives on change are not sufficient. We need new mindsets, holistic approaches that go beyond efficiency, that disrupt current business models, and foster radical change. Fashion, more than any other sectors, can nurture deep, intrinsic links to nature, if we respect materials, humans, and specific relationships with time. From this perspective, fashion must use its strengths in creativity, communication, and self-expression to encourage behaviour and mindset shift. We can offer fulfilling ways of enjoying fashion, educating, informing, and inspiring fashion wearers and increasing their ecological literacy.

3. We need solutions and innovations that address root causes.
   Innovations must look to solve not only the effects of these crises, but also the reasons these effects exist. As well as taking a nature-centric approach, sustainability innovations should be inclusive and holistic should focus not just on fashion materials and products but systems and services; and offer solutions for how to leave behind a better world than the one we live in today.

Our research conducted throughout 2021 – and based on a literature review on fashion and Living Nature, as well as interviews with experts, a roundtable, a hack, contributions to an online platform and responses to the Challenge brief – has enabled us to identify the following key insights, which, in brief, are:
In order to understand fashion’s current relationship with nature, in 2020 we conducted research to review a range of perspectives and activities relating to fashion and nature. Desk research and semi-structured interviews with experts in the field included:

Dr Helen Crowley  
Partner at Pollination

Christine Goulay  
Founder of Sustainabelle Advisory Services

Rossella Ravagli  
Independent consultant

Nancy Johnston  
Founder and CEO of Tengri

Eduardo Escobedo  
Director at RESP, Responsible Ecosystem Sourcing Platform

“We are eroding the very foundations of our economies, livelihoods, food security, health and quality of life worldwide”

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, (2019)
2.1. Biodiversity: Living Nature

To put it in simple words, biodiversity means ‘living nature’; the living skin across the whole world, including animals, plants, the habitats and ecosystems they live in, and how they interact with each other. Our skin holds us together, enables us to breathe and move, to create and to interact in the world.

Biodiversity is defined by the UN as “variability among living organisms from all sources, including inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems”. Its value is priceless, though in contemporary Western terms it is useful to point out that natural capital and biodiversity are valued at 125 USD trillion a year. It is estimated that the current rate of biodiversity loss is 1,000 times higher than the natural rate. According to the United Nations, the top five drivers of change in biodiversity are, in descending order:

- Changes in land and sea use
- Direct exploitation of organisms
- Climate change
- Pollution
- Invasive alien species

Other indirect causes of biodiversity loss are population increase and overconsumption, technological innovations (some of which have been applied in beneficial ways, whilst others in ways that are detrimental to the environment), as well as issues of governance and accountability.

Biodiversity loss causes severe impacts on entire ecosystems but also on the human ability to adapt to the changing environment.

“We are eroding the very foundations of our economies, livelihoods, food security, health and quality of life worldwide” (IPBES, 2019). In other words, biodiversity loss is “not only an environmental issue, but also a developmental, economic, security, social and moral issue as well” (UN, 2019).

The exploitation of nature by the mainstream system of fashion production and consumption is contributing directly to land desertification, drainage of watersheds, water pollution, degradation of coral reefs, an increase in the amount of carbon in the atmosphere, and deforestation.

The evidence of fashion’s destructive processes is widely shared, and a plethora of initiatives focus directly on one or more of these issues. The fashion sector is contributing to a rapid decline in biodiversity and an acceleration of species extinction, with related negative implications on indigenous communities and local knowledge, and livelihoods and cultures being decimated. This involves complex issues that the fashion sector is only just beginning to understand.

There is growing evidence of ways in which the fashion sector can creatively seek to value biodiversity in its practices, such as those demonstrated by Kering (e.g. via its biodiversity strategy, comprising four stages: avoid, reduce, restore and regenerate, and transform) and H&M Global Change Award winners (e.g. carbon-negative fabrics, AI solutions for farmers to monitor the health of their crops, SeaChange technologies separating and cleaning wastewater to eliminate toxic sludge in landfills, and digital systems for Circular Fashion) amongst others.

But the pervasive approach to fashion in relation to biodiversity is simplistic and rational, where sustainable products or materials are seen as a static goal – rather than engaging in the dynamic interactions that take place in Living Nature.

In 2016, the International Union for Conservation of Nature (IUCN) declared an urgent need for the fashion industry to take action towards preserving nature and biodiversity. At the G7 summit in August 2019, The Fashion Pact (a CEO-led coalition which comprises +70 members representing ~250 brands and 1/3rd of the fashion sector) has made Biodiversity one of the three main pillars of its scope of work, along with Oceans and Climate. The Global Assessment Report on Biodiversity and Ecosystem Services by IPBES emphasized the need for transformative change to be implemented now, at every level from local to global, in order to preserve and restore biodiversity, deliver the Paris Climate Agreement and reach the UN Sustainable Development Goals (SDGs) and the 2050 Vision of the UN Biodiversity Convention ‘Living in harmony with nature’. Transformative change implies a “fundamental, system-wide reorganization across technological, economic and social factors, including paradigms, goals and values” as well as new business models (ibid).
### 2.3. Ten ways fashion can support Living Nature

The report by the UN (2019) proposes a range of actions for sustainability and pathways for implementing them, whilst also highlighting the need to move away from the current paradigm of economic growth and defining the parameters of true prosperity in relation to fashion and nature. This requires integrated management and interventions across different sectors, such as agriculture, forestry, marine and freshwater systems, urban areas, infrastructure, energy production and finance, to name but a few. Our research identified ten opportunities for fashion to enable the preservation and regeneration of natural ecosystems, as well as how these are currently exemplified by the fashion sector.

#### Opportunities

<table>
<thead>
<tr>
<th>Regenerative farming and wildlife friendly practices – strategies aimed at simply reducing harm, at creating a positive impact on the environment and making wildlife and ecosystems thrive.</th>
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<tbody>
<tr>
<td>Kering Regenerative Fund for Nature: grants to support, test and scale regenerative agricultural practices.</td>
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<tr>
<th>Diversifying the fibre basket and changing sourcing criteria – this strategy aims at reducing stress on the ecosystem, widening the range of nature-positive materials, including natural fibres, recycled materials and fibres from agricultural waste.</th>
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<tbody>
<tr>
<td>ReVere’s regenerated cashmere</td>
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<td>Resil Fabrics</td>
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<td>Second Life Fibres</td>
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<tr>
<td>Tengri’s use of yak fibre (which has a lighter ecological footprint than goats); or alpaca as an alternative to cashmere.</td>
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<tr>
<th>Animal conservation and economic incentives – this means providing low-income communities with incentives to sustainably manage and protect endangered species.</th>
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<tbody>
<tr>
<td>The Nature Conservancy: holistic animal grazing for sheep.</td>
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<td>The Savory Institute</td>
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<tr>
<td>The International Unit of Conservation of Nature</td>
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<tr>
<td>Conservation International</td>
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<tr>
<th>Eliminating harm (such as removing heavy metals from production processes, or reduction of negative impacts on plants and animals) – such strategies are implemented throughout the supply chain to reduce the negative impacts of fashion manufacturing and preserve nature.</th>
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<tbody>
<tr>
<td>Leather Working Group: build protocols to certify leather manufacturers according to environmental criteria.</td>
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<tr>
<td>The Manufacturing Restricted Substance List (MRSL) lists chemical substances which are subject to a usage ban and establishes acceptable concentration limits for hazardous substances.</td>
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</table>

#### Sector Examples

<table>
<thead>
<tr>
<th>Impact assessment on key species and ecosystems – this strategy is aimed at identifying the biggest impact areas of businesses on biodiversity and tackle environmental issues.</th>
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<tbody>
<tr>
<td>H&amp;M’s Biodiversity Footprint Assessment tool.</td>
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<tr>
<td>Kering’s Environmental Profit &amp; Loss (EP&amp;L) tool.</td>
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<tr>
<th>Traceability and transparency – this strategy is aimed at tracking supply chains to understand where designers and businesses are sourcing from. Although blockchain can contribute to transparency, it can also have a significant environmental footprint through energy use.</th>
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</thead>
<tbody>
<tr>
<td>Provenance uses blockchain technology to increase transparency of materials, processes and people behind products.</td>
</tr>
<tr>
<td>Kering’s suite of Standards (for raw materials and manufacturing processes, synthetics and silk, packaging, visual marketing and innovation, circularity and ‘faux fur’, cut, make, trim, and sustainability claims).</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Designing with nature’s qualities in mind – this means integrating environmental considerations in the design and product development phase (e.g. adopting biomimicry or circular design principles).</th>
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<tbody>
<tr>
<td>Icebreaker’s clothing made of merino wool and other natural materials, making the most of their natural performance.</td>
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<tr>
<th>Certifications – this is becoming an increasing demand from consumers, which poses the need also for farmers, customers and brands to be on board.</th>
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<tbody>
<tr>
<td>The Regenerative Organic Alliance is piloting a regenerative agriculture certificate aiming to restore diversity below the ground.</td>
</tr>
<tr>
<td>The Soil Association certifies organic materials.</td>
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<tr>
<th>Sustainable business strategies – this means frameworks to aid companies in making informed decisions, developing sustainability strategies, and creating new business models, practical roadmaps, and compelling narratives.</th>
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<tbody>
<tr>
<td>Kering’s biodiversity strategy structured in four stages: avoid, reduce, restore and regenerate, and transform.</td>
</tr>
<tr>
<td>The Conservation Hierarchy (Biodiversity and University of Cambridge Institute for Sustainability Leadership), a flexible framework for fashion companies to make informed decisions about the mitigation of impacts on biodiversity.</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Collaboration, lobbying and policy engagement – given the complexity of preserving and regenerating natural ecosystems, businesses need to collaborate with other brands, the media, and governments, to campaign and lobby for accelerating policy reforms.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Fashion Pact (a coalition of over 70 members committed to tackle climate, biodiversity and oceans issues in the fashion sector).</td>
</tr>
<tr>
<td>Common Objective’s Biodiversity Pledge.</td>
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<tr>
<td>Tengri’s agreement with the Mongolian government for not issuing mining licenses and not harvesting over tipping points.</td>
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<tr>
<th>The Watch &amp; Jewellery Initiative 2030 founded by Kering and Cartier to build climate resilience, preserve resources, and foster inclusiveness.</th>
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</table>
2.4. Ten challenges for Fashion and Living Nature

Findings from desk research and the experts’ interviews highlighted ten key challenges for fashion’s relationship with Living Nature, meaning barriers for the fashion industry to preserve and regenerate nature. The following challenges are not listed in order of priority, but are equally important barriers, both from a business and a nature perspective.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumerism</td>
<td>The dominance of consumerist cultures and a model of market stimulation, built-in obsolescence and success based on increasing production and sales.</td>
</tr>
<tr>
<td>Overproduction</td>
<td>Pervasive business practices of over-production, excess stock and mark-downs, based on social acceptability of fashion as constant newness.</td>
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<tr>
<td>Lack of regulation</td>
<td>Lack of suitable infrastructure and regulation in support of Living Nature.</td>
</tr>
<tr>
<td>R&amp;D investment</td>
<td>Lack of resourcing for businesses to undertake R&amp;D on regenerative practices of designing products, services and systems, and shortage of investment and support for their wider application.</td>
</tr>
<tr>
<td>Greenwashing</td>
<td>Greenwashing and lack of access to information – complete and verified – for fashion designers and businesses to fully understand biodiversity issues and make informed decisions.</td>
</tr>
<tr>
<td>Lack of understanding</td>
<td>Generic tools and methods that lack depth and understanding of systemic interdependencies in fashion</td>
</tr>
<tr>
<td>Conflicting agendas</td>
<td>Conflicting agendas (e.g. animal rights, welfare and responsible trade and biodiversity conservation).</td>
</tr>
<tr>
<td>Material costs</td>
<td>High costs and limited availability of novel fibres and new material innovations.</td>
</tr>
<tr>
<td>Negative perceptions</td>
<td>Continued negative perception of some products, where aesthetic considerations do not conform to accepted style, texture, fit and colour aspirations of designers, buyers and customers.</td>
</tr>
<tr>
<td>Short-term thinking</td>
<td>Actions aimed at preserving and regenerating natural ecosystems are often incompatible with most fashion business models, which are focused on short-term reporting.</td>
</tr>
</tbody>
</table>

Overall, the research undertaken has highlighted a need for those with scientific, artistic, technical, entrepreneurial, political, and sociological expertise to support the next generation of creatives who seek to design with Living Nature in mind. The sections above provided an overview on a range of opportunities and challenges relating to fashion and Living Nature. There are some promising practices that offer signs of how to shift in the right direction but, as yet, there is a fundamental clinging on to economy over ecology, short-term gain over long-term viability. We have the technology, the science, but do we have the will and creativity to design fashion that can respect, protect and regenerate Living Nature?

How can fashion deliver transformative change? How can it truly value Living Nature?

Fashion Values centred on answering these provocations through its programme of activities, beginning with the Roundtable and the development of the Challenge brief.

Given the shortage of research and practice on fashion and Nature, Fashion Values launched a call to action for designers, businesses and communicators to develop regenerative products, services, and systems, aimed at transforming our interactions with nature. With this in mind, in January 2021 Fashion Values brought together representatives from a cross-section of the fashion industry to define what Living Nature needs from Fashion. Invited for their diverse disciplinary, locational, professional, and personal perspectives, the roundtable participants included brands, start-ups, educators, researchers, activists, NGOs, media and tech, as well as core partners CSF, Kering, IBM and Vogue Business.

The objective of the roundtable was to facilitate open discussion amongst the participants in order to co-create a Challenge – a set of briefs for changemakers asking for ideas, innovations and creative approaches to restoring nature through fashion. The Roundtable participants offered the wisdoms of their experience, expertise, and knowledge of fashion and nature: what challenges they face, what opportunities they see, and most importantly, what change they want to see in the world.

Together they answered the question – what does nature need from fashion? And how can we bring this change about?
3.1. The Roundtable: a set of wisdoms for supporting change

Throughout the conversations of the day, the Roundtable experts shared ‘wisdoms’ – perspectives on fashion, nature, and change – that they wanted to pass on to the next generation. Three themes kept recurring, necessary elements in creating the kind of transformation that they want to see.

How can we create change? Through...

### Systems Thinking

The need to go beyond the currently pervasive, simplistic approach to fashion in relation to biodiversity. Instead of considering a sustainable product or material as a static goal, we should rather engage in the dynamic interactions that take place in Living Nature.

> “We care about nature, and we want to do it, but actually knowing what are the best interventions to make is hard. […] The science around this is still emergent, so it’s hard to know how to work in an ever-shifting landscape. […] Bringing together cross-disciplinary issues – from the science to the economics, to the creative elements of this – is really critical” (Catherine Bottrill).

> “You can’t let the analysis stop the effort. Sometimes you have to take the best bet you have and start to create the change in the right direction. If you realise you’re going off course, then you have to be able to steer, or pivot, or course-correct on that” (Karl Haller).

### Connection

The need for valuing Nature as an essential force for our life, to recognise the mutual interdependence between fashion and nature, to empathise with nature, and to acknowledge our individual and collective circumstances and the global context in which we exist. Seeing ourselves as ‘part of the solution’ is a crucial way in which we can mobilise a global community of change-makers to reimagine fashion’s practices and put nature first.

> “You need to take the role of someone else and really try to describe what the expectations would be of the fashion industry from that role. […] What, for instance, a tree, or an ecosystem would need vis-a-vis you as a strategist?” (Eduardo Escobedo).

### Collaboration

The need for open-minded, non-hierarchical and thoughtful collaboration, based on recognising and valuing collective efforts and a cultivation of caring and trusting relationships. The key to innovation and systemic progress. The experts called for collaboration to educate each other; address complexity together; communicate effectively to diverse audiences; and connect with each other and beyond.

> “We need to take our eggs down; the designer is now part of a collaborative team working together making mistakes, falling out, coming back together again” (Bel Jacobs).

### Attitudes towards design

Shifting from a process focused on designing things (e.g., a dress or a trend) and instead considering why we design – an opportunity to explore creative practice in greater depth: What will it change in the world? What and who will benefit from it? What is the impact it creates?

> “I’m a designer, I want to design things. But how can you do that in a good way and step back to the first principle: why do I want to design?” (Katherine Pogson).

### Self-expression and creativity

What does it mean to express ourselves creatively when we shift from an Age of Extraction to an Age of Regeneration? From this perspective, the power of creativity extends beyond objects to design aesthetics, visual language, systems, services, and beyond.

> “How can we still express ourselves creatively and use our talents and designs in the right way?” (Christine Goulay).

Alongside these three wisdoms, the experts offered further reflections relevant not only to the Fashion Values programme but the wider industry. These changes in the ways we currently approach fashion, they emphasized, will be vital to restoring Nature.

What do we need to shift? Our...
3.2. The Challenge Brief: a wish list for what nature needs from fashion

The result of the Roundtable – the Challenge brief – asked change-makers from all over the world to share responses to the question “how can Fashion value Nature?”, applied to the fields of design, media and/or technology.

The brief sought transformational ideas from Challenge applicants, but also doubles as a wish list from the Roundtable experts, defining the industry challenges that, if answered, would be instrumental in restoring Nature through fashion:

<table>
<thead>
<tr>
<th>Field</th>
<th>What nature needs from fashion</th>
<th>Ways fashion can fulfil this need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Fashion products, services and systems that change the way we design, create, make, produce, wear, use or dispose of clothing.</td>
<td>Nature-centric materials, textiles production or processing techniques</td>
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<td>Alternative models for craft, making and manufacturing</td>
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<td>Application of traditional, regional or indigenous knowledge of fashion design and sustainability</td>
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<td>New business models or offering fashion as a service</td>
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<td>Ways to use or restore waste</td>
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<td>New knowledge and understanding applied to fashion design or sustainability</td>
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<td>Ways to map, understand or analyse fashion’s impact on Nature from a 360° business perspective</td>
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<td>Innovative partnerships or collaborations (especially with fields outside of fashion) to create change</td>
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<td>Ways to build long-lasting and emotional relationships with our clothes</td>
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<td></td>
<td>Nature-centric design and product development</td>
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<tr>
<td>Media</td>
<td>Media and communications that create a positive narrative for sustainability and explore new ways of engaging with fashion.</td>
<td>Nature-centric approaches to media (for example through image-making, journalism, writing, brand communications, social media etc.).</td>
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<td>Ways to make fashion sustainability accessible, engaging and understandable</td>
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<td>Ways to challenge colonial or normative fashion narratives</td>
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<td>Ways to challenge consumerist cultures and encourage sustainable engagement with fashion</td>
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<td>Ways to connect people emotionally, empathetically or viscerally with fashion and nature</td>
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<td>Ways to effectively communicate complex sustainability topics or to raise collective awareness</td>
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<td></td>
<td></td>
<td>Ways to effectively communicate biodiversity and climate emergency priorities and actions</td>
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<td></td>
<td>Ways to harness social media and other person-to-person media platforms</td>
</tr>
<tr>
<td>Technology</td>
<td>Technology that enables innovation in the ways we produce, use and engage with fashion.</td>
<td>Ways to measure, track, critically analyse, understand and/or report on fashion’s impact on nature</td>
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<td></td>
<td>Applications of innovative technologies, sciences and tools to fashion and sustainability</td>
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<td>Application of traditional knowledge and tools to fashion and sustainability</td>
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<td></td>
<td>Ways to embed Nature into the development and application of fashion technology</td>
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<tr>
<td></td>
<td></td>
<td>Nature-centric approaches to the production, consumption and cycling of fashion products</td>
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<td></td>
<td>Decentralised, open-source, crowd-sourced or peer-to-peer technology practices applied to fashion and sustainability</td>
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<tr>
<td></td>
<td></td>
<td>Digital or immaterial fashion practices</td>
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</tbody>
</table>

The Challenge brief doubles as a wish list for the wider fashion industry, offering direction and inspiration to explore the ways it can fulfil the needs of Living Nature.

But how can this wish list be supported through Fashion Values – in particular, how can education play a role in driving change?
4. How Fashion can Value Nature: The Hack, the Platform and the Online Courses

“We will need to look at Nature, to these 3.8 billion years of R&D, to understand how to get ourselves out of this mess we’ve got ourselves into.”

Dr Helen Crowley

The Hack and online Platform (fashionvalues.org) offered a range of resources not only in support of the Challenge applicants, but also for anyone, anywhere in the world, who wished to learn more about how fashion can value nature.
4.1 The Hack: Five essentials for innovation

In order to support prospective Challenge applicants to develop their submissions, in August 2021 a Hack was conducted as an online, open-access event. Attended by over 80 people globally, the event offered insights from leading industry experts in design, technology and media.

Speakers at the Hack included:

- Nina Stevenson, Education for Sustainability Leader at Centre for Sustainable Fashion, UAL
- Dr Helen Crowley, (Partner at Pollination)
- Karl Haller, Leader of the Consumer Centre of Competency at IBM
- Sara Maino, Deputy Director of Vogue Italia and Head of Vogue Talents

The Hack offered a variety of perspectives to inspire responses to the Challenge, exploring the conditions necessary for turning ideas into viable concepts for innovation in sustainability. The five key innovation essentials for fashion and nature shared by the speakers included:

- **Legacy**
  
  Any new idea looking to innovate in response to fashion and sustainability must regenerate Nature, so that we leave behind a better world than the one in which we live. Legacy offers a lens to explore how to value nature through fashion, providing a way to assess ideas for their long-term impact.

  “You have the power to make this [change] and this is in your hands... The next generation is our future, but we are all here and take a part in the world. We’re all here passing by, we’re not immortal, so I think it’s fundamental that we always leave behind something better for who comes after” (Sara Maino).

- **Learning from nature**
  
  Humans have been on Earth just for a relatively small proportion of all life on Earth – providing an opportunity to learn from Nature how to live sustainably in interdependence with all species, and demonstrating the need for adopting a much humbler approach to design and innovation.

  “We will need to look at Nature, to these 3.8 billion years of R&D, to understand how to get ourselves out of this mess we’ve got ourselves into. So, it is not just about doing things to protect and restore Nature; it is also about learning from Nature in a very humble way” (Dr Helen Crowley).

- **Economic Impact**
  
  A new idea must also consider potential economic impact from the perspective of both the buyer and the seller. In order for an innovation to take off, it must be viable – along with a clear plan for how to get people to start using it, scale it, and encourage users to recommend it to others and start selling the idea on behalf of its inventor.

  “I’m not saying that you have to be economically or financially driven, but you at least have to understand it because that’s ultimately how a lot of ideas go forward” (Karl Haller).

- **Messaging**
  
  Innovation cannot survive without clear messages that communicate, in simple and compelling ways, the value of any new idea. The increase of consumer awareness of sustainability has also seen an increase in demanding clear and trusted information about products. Messaging, therefore, must articulate why and how an innovation can have a positive impact on Nature.

  “It’s not just about a beautiful product, but it’s also about how you do that, why you are doing it, what you want to change, and how you get there. This is very important” (Sara Maino).

- **Business perspectives**
  
  Sustainability and business innovation have to be interconnected like never before. There is a need to implement solutions that drive business value and are sustainable at the same time. Innovations can be either incremental or radical, both types are needed, but it’s important to devise the right approach for implementing sustainable innovations. Technological innovations (e.g. AI, IoT, blockchain, 3D modelling, etc.) can be applied across all stages of the product life cycle (from raw materials and sourcing to fibre processing and textile production, design and manufacture, logistic and supply chains, marketing, retail, through to end of life).

  “For those of you who are trying to start something yourself that might change the world, that’s a big ‘I’ Innovation. If you’re thinking about an idea that can impact some of the larger brands or companies in the world and if you’re going to integrate it into how they are, then there is an opportunity for small ‘i’ innovation. They’re both needed, but it’s important to understand which one you’re actually going to tackle, because that will differentiate how you approach it” (Karl Haller).

These insights offer a framework for assessing new ideas and innovations, providing a balance of viability from both a business and planetary perspective.
4.2 The Platform and the Online Course: Two things to learn from fashion and sustainability education

The Platform is the digital home of the Fashion Values programme, providing an online space for educational resources for learners all over the world to increase their sustainability knowledge. The Platform hosts a range of open-source educational content, interviews as well as podcasts featuring subject matter experts from partners and other relevant organisations – all designed to support engagement and understanding of the topics explored through the programme:

— Voices: inspirational content such as articles, videos and podcasts that focus on the year’s central sustainability theme.
— Methods: short-form, subject-specific learning modules created in collaboration with the Fashion Values partners, drawing from their expertise and perspectives across fashion, media and tech.
— The Fashion Values: Nature four-week online course (hosted on FutureLearn).

To support the Challenge ideation process, the Fashion Values: Nature online course launched in April 2021 on FutureLearn. The four-week course is open source and provides a wealth of expert content, interviews as well as podcasts featuring subject matter experts from partners and other relevant organisations – all designed to support engagement and understanding of the topics explored through the programme.

By the end of the course, it is expected that learners will be able to:

— Reflect on Fashion’s relationship with Nature and how this relates to fashion sustainability;
— Understand Nature’s systems that support life (biosphere) and explore Fashion practices that could operate within the limits of Nature’s systems;
— Understand biodiversity in the context of Fashion;
— Critically examine Fashion practices that can protect, restore and regenerate Nature’s systems, and transform Fashion’s relationship with Nature;
— Develop and evaluate a Fashion practice that can regenerate Nature.

Analysis of the outputs of the activities, and the comments and feedback shared by the learners on the platform, highlighted that the learning aims outlined above were fully met. This is exemplified by some comments shared by the learners, such as the ones below:

“This course has taught me a mixture of emotional, value-based and practical skills. What I’ve really resonated with was the reminder throughout the course to act, think and design in a way that is value- and nature-centred... Beyond the skills of Design Thinking, the Mitigation Hierarchy has become unbelievably helpful in taking the big problems facing nature in fashion into digestible chunks and processes to reach results and goals for nature. The skills I have learnt here will make sure that, whichever career I go into, I can keep nature at the centre of my actions while being practical and innovative”

“I got priceless reading material, information, resources, books, news, problems, solutions, brands, persons, many more. Thanks for encouraging me to join this course... I have gained a lot of knowledge from this course and my way of thinking has changed after completion of this course... Thank you”

“Dr Katrina Ole-MoiYo

The entire fashion sector can use its strengths to better value nature

Design thinking is applicable to everyone, not just designers

The Fashion Values programme offers comprehensive and free-to-all resources to help support these learnings. Access them resources here.
5. Fashion Valuing Nature: The Challenge

In response to the brief, the Fashion Values Challenge received over one hundred submissions exploring how fashion can value nature. With responses from Argentina to Australia, Serbia to Senegal, Iran to Iceland, the submissions represented a global perspective on changing the industry’s relationship from extractive to restorative.

Key facts
- 108 submissions
- 39 countries across Asia-Pacific, Africa, the Americas, Middle East and Europe.
- 34% products, 32% services, 30% systems, 4% other.
- 39% at working prototype stage, 27% at concept stage, 17% ready to prototype and 17% other.

Watch the finalists present their projects in the Fashion Values Nature Finalist Interviews.

34% of the projects submitted to the Challenge were new products (including materials); 32% are innovative services (including digital platforms), 30% are new systems (including processes, such as recycling and upcycling). The remaining 4% were classified as ‘other’ and included installations, assessment methods, a sustainability index, and eco-incentives.
5.1. Judging

The projects submitted to the Challenge were assessed by a judging panel composed of nine representatives from the core partners as well as key experts:

- Helen Crowley (Pollination)
- Karl Haller (IBM)
- Sara Maino (Vogue Italia)
- Diliys Williams (Centre for Sustainable Fashion, UAL)
- Ai Aonuma (Kamakura Sustainable Institute)
- Matthew Drinkwater (Fashion Innovation Agency, UAL)
- Emanuela Gregorio (Fashionomics Africa)
- Dian-Jen Lin (Post Carbon Lab)
- Archana Datta (Asian Institute of Technology)

See Appendix A for Challenge judging criteria.
5.2. Shortlisted Projects

Based on the judging criteria outlined in Appendix A (i.e. relevance, feasibility, originality, sustainability impact and thinking), the following nine projects were shortlisted:

**Project**

**Challenge Brief Wish List**

**ECCE 'Second Nature'**
by Erik Hesselman

A peer-to-peer fashion media platform giving users a new way to wear: digital clothing as thrilling as the physical experience. The mobile platform uses augmented reality photo filters to share styles and decentralise fashion communication.

Field: Media, Technology
Concept Type: Service

- Ways to challenge consumerist cultures and encourage sustainable engagement with fashion.
- Ways to harness social media and other person-to-person media platforms.
- Applications of innovative technologies, sciences and tools to fashion and sustainability.
- Digital or immaterial fashion practices.

**Kinabuhi: New Life through Modern Weaves**
by Jessica Ouano

An upcycling fashion business that reworks damages or unwanted second-hand garments with regenerative handwoven textiles, working in partnership with local communities in the Philippines.

Field: Design
Concept Type: Product, System

- Alternative models for craft, making and manufacturing.
- Application of traditional, regional or indigenous knowledge of fashion design and sustainability.
- New business models or offering fashion as a service.
- Ways to use or restore waste.

**Future Wardrobe**
by Future Wardrobe Collective

An algae-based collection of materials derived from kelp, investigating their potential to be functional and net positive for communities and the environment.

Field: Design
Concept Type: Product

- Nature-centric materials, textiles production or processing techniques.
- Nature-centric design and product development.
- Ways to map, understand or analyse fashion's impact on Nature from a 360º business perspective.
- Applications of innovative technologies, sciences and tools to fashion and sustainability.

**It's a Folk**
by Namrata Tiwari

A ‘fibre to closet’ local economy bringing together yak herders, weavers, artisans and local communities to revive regenerative farming practices and provide an alternative to unsustainable cashmere production.

Field: Design
Concept Type: System

- Application of traditional, regional or indigenous knowledge of fashion design and sustainability.
- Innovative partnerships or collaborations (especially with fields outside of fashion) to create change.
- Nature-centric design and product development.
- Ways to challenge colonial or normative fashion narratives.

**ZYOS™**
by Pepe Costa

A service to reduce microfibre pollution with a colour-changing label that reveals a QR code when a garment reaches its optimal recycling point. By scanning the QR code, end users can access information about where and how to properly recycle their garments.

Field: Technology
Concept Type: System

- New business models or offering fashion as a service.
- Applications of innovative technologies, sciences and tools to fashion and sustainability.
- Nature-centric approaches to the production, consumption and cycling of fashion products.
- Ways to effectively communicate complex sustainability topics or to raise collective awareness.

**pH (poetic Hues)**
by Marion Jaouen

A retail concept that brings together a materials laboratory and a fashion store. Customers can co-create a personalized bacterial dye to customize vintage and second-hand clothing, creating an emotional connection to their purchase.

Field: Design
Concept Type: Service

- Nature-centric materials, textiles production or processing techniques.
- Alternative models for craft, making and manufacturing.
- Ways to build long-lasting and emotional relationships with our clothes.
- Applications of innovative technologies, sciences and tools to fashion and sustainability.

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See Appendix B for a detailed overview of shortlisted projects.
5.2. Shortlisted Projects

Based on the judging criteria outlined in Appendix A (i.e. relevance, feasibility, originality, sustainability impact and thinking), the following nine projects were shortlisted:

<table>
<thead>
<tr>
<th>Project</th>
<th>Challenge Brief Wish List</th>
</tr>
</thead>
</table>
| TAG IT: An App to Cultivate Emotional Bonds to Your Clothes by Yifei Xu | - New business models or offering fashion as a service.  
- Ways to build long-lasting and emotional relationships with our clothes.  
- Nature-centric design and product development. |
| VYN Repairable Sneakers by Stefan Mathys | - Ways to make fashion sustainability accessible, engaging and understandable.  
- Ways to effectively communicate complex sustainability topics or to raise collective awareness.  
- Ways to harness social media and other person-to-person media platforms.  
- Ways to effectively communicate biodiversity and climate emergency priorities and actions. |
| Seed: The Sustainable Fashion Guide by Melanie Heeker & Lilian Weiermann | - Ways to build long-lasting and emotional relationships with our clothes.  
- New business models or offering fashion as a service.  
- Ways to harness social media and other person-to-person media platforms.  
- Digital or immaterial fashion practices. |

See Appendix C for a detailed overview of shortlisted projects.
5.3. Winners

Besides the large number of submissions to the FV Challenge, all the shortlisted projects were of high quality, demonstrated slightly varying levels of originality and relevance to the Challenge brief, originality, and illustrated various forms of sustainability thinking and impact. After a lengthy process of assessment, taking into consideration various factors, the following three projects were selected as winners of the 2021 FV Challenge.

**Future Wardrobe Collective: Future Wardrobe**

This project aims to provide an alternative regenerative material from kelp to reduce the human’s dependence on fossil fuel-based polymers in the textile industry. In line with the stages of Kering’s biodiversity strategy, the project avoids using toxic plastics and chemical pollutants, reduces land use for crops, restores and regenerates oceans by sequestering carbon and “afforesting” underwater ecosystems, and transforms production processes by making mindful connections from source to skin and back to source.

The regenerative fashion collection uses kelp, a fast-growing resource that can help rebuild aquatic ecosystems and provides secure year-round crops for coastal communities without the need for arid land, insecticides, or pesticides. Kelp and various microalgae also soak up and fix carbon from the atmosphere as they grow, helping regulate global temperature and realizing oxygen.

Future Wardrobe Collective uses a conceptual business model, Innovatrix, to start the design process by considering specific biodiversity (micro and macroalgae) as their clients. They start by thinking about how to bring value to these key stakeholders by taking time to understand their unique personas, needs, and barriers to offer solutions based on species awareness and planet-first values.

Future Wardrobe Collective undertook a nine-month development process to advance their material and create a proof-of-concept capsule collection, developing techniques to sew, seal, waterproof, laser-cut, form, and handcraft the material effectively. They designed and fabricated custom machines to create yarns to spin and weave. To test the end-of-life cycle, they conducted biodegradability tests in the soil at a local urban farm. They also conducted tests in a lab setting to gain insight into the impact of their organic material on living organisms and their micro-habitat.

Future Wardrobe is currently at prototype stage, but there is potential to develop it into a minimum viable product and share kelp’s properties with more people. Incentives could be given to farmers to engage in regenerative ocean farming practices by showcasing the potential of kelp as a material and ecological ally. There is room for Future Wardrobe Collective to work with textile producers to rethink production practices when working with biomaterials, but also to collaborate with brands and retailers looking to change the way we source, make and engage with fashion.
5.3. Winners

Erik Hesselman: ECCE ‘Second Nature’

ECCE is an engaging fashion-tech mobile application connecting decentralized audiences, and imbuing users with inherently sustainable practices. This project tackles the need for society to evolve collectively to biosphere consciousness, adopting a system thinking approach to networks of natural harmony and balance.

ECCE contributors raise awareness by producing their own fashion narratives, consuming less, and valuing what exists. ECCE editors curate limited edition drops of museum quality vintage through augmented reality photo filters that utilize advancements in blockchain tracing and 3D animation. ECCE is a virtual shared economy of user-generated media where fashion doesn’t consume natural resources, beyond the social injustices of publishing hierarchies, refuting the Western ideals of colonialist fashion structures.

ECCE’s users don’t contribute to overconsumption. A single piece can be reproduced multiple times in very diverse contexts without increasing physical resource use. Moreover, every filter credits where and how the piece was made. ECCE is for everybody who desires change in fashion’s limited concept of beauty and anybody that ever felt too self-conscious to browse through a luxury boutique. Fashion creates communities based on a shared appreciation of aesthetics. ECCE celebrates behind-the-scenes stylists, and human perspectives not replicable with artificial intelligence. Local editors curate clothing with community specific means and ideologies; drops are region exclusive to avoid cultural appropriation. Users pay per piece with in-app currency or subscribe for unlimited access.

ECCE promotes physical garments only to benefit the existing network of fashion brands, museums, and young creatives in the industry. Blockchain allows ECCE to track a filter’s performance, financial success, and positive environmental impact. ECCE will make analytics accessible and pay a percentage of revenue to respective copyright holders. This revenue stream enables external companies’ investment in blockchain tracing, sustainable sourcing, and environmental restoration, creating radically symbolic relationships between fashion and nature. ECCE ensures renewable energy consumption via solar panels.

Erik Hesselman argues that consumers won’t become conscious unless the change creates improvements in functional ease and aesthetic beauty of day-to-day life. With this in mind, ECCE embraces editorial aspiration to promote positive change. Transforming the passive relationship consumers have with social media into one contribution, ECCE is in tune with millennials and Gen-Z. Cultivating the empathic, experimental capacity of users will inspire initiative in restoring and protecting Earth’s biodiversity.
5.3. Winners

Kinabuhi: New Life through Modern Weaves

Kinabuhi means ‘life’; in the Visayan language. Kinabuhi is a design concept and fashion business that believes in the power of fashion to restore nature and influence people to contribute to positive change. The mission is to build a better life for all its stakeholders, which include:

1. Regenerative farms and eco-conscious yarn manufacturers, second-hand stores, makers, NGO and Philippine indigenous communities, users: Kinabuhi aims to support producers and manufacturers working towards adopting regenerative practices by purchasing all its natural fibre yarn from eco-conscious manufacturers committed to source their natural fibres and dyes from regenerative farms.

2. Second-hand stores: In the Philippines, second-hand garments are sold in stores called ‘ukay-ukay’. These stores are meant to be the main source of Kinabuhi’s second-hand garments. There are often a lot of damaged or unfashionable garments in these stores, so the project focuses on taking stock that these stores struggle to sell.

3. Markers: Kinabuhi aims to rework second-hand garments by adding unique handwoven accents. This provides livelihood opportunities, and pays living wages to garment workers and handloom weavers who play an important role in bringing these products back to life. Kinabuhi will highlight the value of these makers’ craft and create garments that represent the Philippine’s unique cultural identity.

4. NGOs and Philippine Indigenous communities: The Centre for Sustainability PH is on a mission to protect Cleopatra’s needle in Palawan Island, the Philippines’ biggest critical habitat at 41,350 square meters. Kinabuhi commits to donate 10% of its net profits to support them on their mission.

5. Users and consumers: Kinabuhi will allow customers to send their own second-hand garments to be reworked. It also aims to organize a variety of activities and events which involve consumers in the making process from fibre to finish, so they can have a better understanding and appreciation of how Kinabuhi’s one-of-a-kind reworked products are made. Kinabuhi also intends to engage with the local community and involve them in projects that can contribute to the development of local regenerative farms or the preservation of forests.
5.4. The Challenge: Signals for changing the fashion industry

In putting nature first, everything else falls into place.

Each of the submissions clearly wants to make a change to the fashion system – they all have a purpose or cause beyond more traditional motivators for innovation (such as profit or creative fulfilment).

Putting these causes at the centre of their work – like Future Wardrobe making micro and macroalgae their clients – ensures innovations have an earth- and equity-first approach to development.

Truly sustainable innovations re-orient the relationship between fashion and nature, looking to restore nature through fashion rather than fix symptoms or address superficial problems.

Sustainability innovations must be inclusive and holistic (i.e. considering the interdependencies between the environment, economy, society, and culture) in order to foster systemic change.

While the 2021 Challenge brief focused on fashion and nature, very few of the innovations looked at environment alone. Many submissions were interwoven with social, cultural or economic concerns, reflecting the parallel causes of social and environmental justice.

Though the Fashion Values programme spotlights one agenda each year, the strength of sustainable transformation is found in change that is inclusive and holistic. Innovation must address the needs of planet, society, culture and economy alike.

Changing the way we design isn’t enough to avert the crisis.

The field of design was well-represented: two thirds of the shortlisted submissions were design innovations such as products, materials or retail services. Design is still the primary way we’re addressing sustainability.

While this is understandable within the context of fashion and nature:
— products are responsible for much of fashion’s destructive practices
— it does signal a gap in the need to change behaviours and mindsets around sustainability.

Media and technology must play a more prominent role in transforming our industry, normalising sustainable attitudes and helping to decouple fashion from resource use.

Truly transformative innovation isn’t easy to categorise – but is vital to shift the fashion system.

The most transformative ideas are ones that cannot easily be classified, and that we may take longer to understand. Few of the finalist’s submissions fell neatly into the category of product, service or system, but instead threaded elements of all three into the project.

The innovations that will help us radically shift the fashion system and avert the climate and biodiversity crisis are not necessarily ones we will easily accept. The fashion industry must work harder to implement ideas that are challenging, uncomfortable and revolutionary alongside those that are more easily achieved.

The finalists’ submissions are a sign of the creativity, motivations and transformational thinking found in the next generation of change-makers.

What signals of change can we read from the submissions? What does the wider fashion industry need to learn from them?
6. Conclusions

Findings from the landscape review provide the fashion sector, from students to CEOs, with a set of opportunities and challenges to assess their current practices, progress, and ambitions. The guide offers promising examples of regenerative farming, fibre diversification, animal conservation, harm elimination in manufacturing, impact assessment, design with nature in mind, traceability and transparency, certification, sustainable business strategies, lobbying and policy engagement. It also offers a call to action to address overproduction and overconsumption, lack of regulations, shortage of R&D investment, material costs, greenwashing, lack of understanding, negative perceptions, conflicting agendas, and short-term thinking.

The Roundtable experts shared a set of wisdoms that can be applied to the fashion industry to guide transformative change towards sustainability. The guide is a call to action for those working in and around the fashion sector to embrace complexity in order to envisage and implement multi-faceted sustainability strategies, to recognise the positive connections we have with nature, to build collaborations with competitors, consumers and stakeholders in order to tackle the complex challenges related to fashion and Living Nature. The guide also highlights the need to embrace self-expression and creativity and change our attitudes to design, asking what nature would have us do, and using design as a force for positive change. Insights gathered from the Hack offer a framework for assessing new ideas and innovations, seeking a balance of viability from both a business and planetary perspective. The guide invites everyone in the fashion sector to develop new ideas that consider and tackle the climate and biodiversity crisis, are based on a strong business case, have clear messaging, create economic impact, and leave a positive legacy.

The online resources offers insight that can be applied to fashion industry’s sustainability efforts. In highlighting the crucial role of education in the shift from fashion’s extractive relationship with nature towards a regenerative one, the guide is a call to action towards building high levels of sustainability literacy across the sector, in order to implement such a shift in time to avert the climate and biodiversity crises. With this in mind, it offers information, tools, and examples of how to use design thinking across non-design teams or activities in support of sustainability, and it calls for a global community of learners to use personal and organisational strengths to better value nature.

The responses to the Fashion Values Challenge offer direction and inspiration for everyone in fashion, and exemplify how design, media and technology can be used to fulfil the needs of Living Nature, contribute to new business models, make sustainability understandable and accessible, and measure and track fashion’s impact on nature. The programme partners, judges and the global community were impressed by the quantity and quality of the Challenge submissions, but we acknowledge that these are mostly still in idea stage, that can contribute to raising awareness, but more work is needed in order to trigger and implement real systems change. Nevertheless, the common characteristics of the finalists’ submissions offer a framework for doing this in a transformative way, putting the needs of the earth first, embracing holistic perspectives, and going beyond merely design-focused ideas, to also address mindset change.

Based on feedback received so far, the winners of the Fashion Value Challenge have benefited from the support received from the programme partners, and are developing their projects further, but longer-time is required to track the evolution of these innovations, assess their impacts, and inspire other initiatives. As a next step, considering the need to tackle both the climate crisis and social injustices, the second year of the Fashion Values programme will focus on Society, whilst the partners remain committed to holistically consider the interdependencies between fashion and the environment, society, culture, and the economy.
6.1. Key Insights

Returning to our provocation for the 2021 programme, Fashion Values asks how can fashion deliver transformative change? And how can it truly value Living Nature?

Across all the insights from the Fashion Values programme, three recurring themes offer possible answers to these questions: putting nature first; changing our approach to fashion itself; and finding solutions and innovations that address root causes.

We need to put nature first.

As the Challenge applications highlighted, when you put nature first, everything else falls into place.

This insight gives us a goal to work towards: a nature-centric fashion industry, with a supporting value system that prioritises Living Nature over profit, growth, creativity or any other traditional success measure. This is the vision for the future our industry must bring about to avert the climate and biodiversity crises and restore our relationship with nature.

It provides us with a critical framework for strategy-building – how is Living Nature embedded into our collective ambitions, organisational success measures or work packages? How will we use design, media and technology to restore nature through fashion?

From a shorter-term perspective, it offers a provocation for everyday decision-making – how will Living Nature be impacted by the choices we make in our work? How can Living Nature be included as a stakeholder in individual or organisational decisions?

We need to find ways to learn from over 3.8 billion years of nature’s systems design. As a possible next step, UAL’s ‘Art for the Environment’ residency programme is an opportunity to learn in nature and explore concerns that define the 21st century – biodiversity, environmental sustainability, social economy, and human rights. There is also a need for cross-sector collaborations (with soil experts, indigenous communities, scientists, anthropologists, etc.) and develop projects (such as CSF’s ‘Life in Clothes’) that explore the interconnections and parallels between fashion making and farming practices, and envision and implement place-based organic fashion systems aimed at human and environmental healing.

We need to change our approach to fashion itself.

Often, fashion and sustainability discourse focuses on products, materials and physical environmental impacts. But fashion is more than just products, and changing the way we design and make clothing is not enough to avert our ecological crises.

Fashion must use its strengths in creativity, communication, and self-expression to encourage behaviour and mindset shift – as well as changing the way we use and dispose of clothing. We can offer fulfilling ways of enjoying fashion beyond cycles of production and consumption, for example those proposed by winning project ECCE ‘Second Nature’. We can educate, inform and inspire fashion wearers to love what they have, or increase their ecological literacy.

Design, media and communications, and technology all play a vital role in moving sustainable fashion narratives away from a myopic focus on products and materials, and instead look to bring about change across the entire sector.

We need to develop infrastructures of fashion that extend its perception and its value. Transformation design and participatory practices – with researchers, designers, and teams from micro to global fashion businesses and students in a range of locations – are needed to extend the value of fashion through design and business model innovation. With this in mind, we invite the readers of this guide to engage with CSF’s ‘ReModelling Futures Method’ to produce innovative product, service system concepts that take stock of current and future contexts for design.
We need to foster innovation to address root causes and move forward.

While innovations can offer solutions to the biodiversity and climate crises, we cannot hope to transform the relationship between fashion and nature without addressing this relationship in the first place. Innovations must look to solve not only the effects of these crises, but also the reasons these effects exist.

The insights within this guide offer ways of evaluating solutions to ensure they are viable, communicable and capable of addressing causes as well as effects. As well as taking a nature-centric approach, sustainability innovations should be inclusive and holistic; should focus not just on fashion products but systems and services; and offer solutions for how to leave behind a better world than the one we live in today.

As the Challenge shortlist demonstrated, innovations that are difficult to categorise or that challenge current paradigms are those that are most transformative. A key challenge for these innovations will be finding a balance between feasibility and transformative potential — ideas that are viable enough to take hold in the fashion industry of today, while capable of bringing about the nature-centric industry of tomorrow.

We invite the readers of this guide to use the CSF framework for developing prosperity in environmental, social, cultural, and economic terms. For instance, at Centre for Sustainable Fashion, we are working with design-led micro, small and medium sized enterprises (MSMEs) as catalysts for net zero goals, resilience, and sustainable prosperity.

Finally, we seek this guide will inspire a multiplicity of voices and agencies (such as academics, design students, activists, start-ups, brands, NGOs) to develop innovations that contribute to the wellbeing economy, and to a fundamental shift from an age of extraction to one of regeneration.
7. Appendix

A. Challenge Judging Criteria

Building on the Kering Awards criteria defined by CSF and Kering in support of transformative change through education, the following criteria were used by the judging panel to assess the Challenge submissions:

— Relevance
  The ability to engage with, analyse, research and respond to the Challenge question; a clear demonstration of how the idea will benefit its users, audiences, and stakeholders; a clear understanding of the Fashion Values online resources.

— Feasibility
  Application of a concept through to a feasible outcome; demonstration of how the idea would be brought to life, what stakeholders would be involved, and how it will enable change in the industry; clear communication of the idea.

— Originality
  The ability to conceive and develop original ideas, what stakeholders would be involved, and how it will enable change in the industry; clear communication of the idea.

— Sustainability impact and thinking
  A holistic understanding of fashion and sustainability across ecological, economic, cultural and social perspectives; demonstration of how the idea will change Fashion’s relationship with Nature.

B. Shortlisted Projects

Pepe Costa: ZYOSH™

ZYOSH™’s mission is to help fashion to prevent textile microparticle pollution, focusing on microfibre shedding that occurs when washing garments. The service consists of:

— A patented label that contains two colours, one that is fixed and another that fades away depending on the number of washes (for each washing temperatures, like 30°C, 60°C, etc.). When the label colour changes, a QR code becomes visible and readable.
— A software platform that receives the readings of the QR codes embedded on the ZYOSH™ labels, thus allowing the user to contact the brand at the optimal recycling point: before the garment starts shedding microparticles in an accelerated way.

How it works:
— ZYOSH™ supplies each brand with a back-end software platform that encrypts the SKU information in a QR code that is smartphone readable.
— The brand uploads the garment SKU details into the system.
— When the end user scans it, the cloud-based platform receives the call and sends back the stored information to the user instructing how and where to properly recycle the garment, and if a loyalty scheme or reward from the brand is available.

Using the above-mentioned tools, the service has different phases:
— ZYOSH™ lab analyses the fabric microparticle release behaviour on accumulative washes and detect when the fabric starts to pollute on an accelerated way.
— Knowing the fabric behaviour to microparticles emission to wash cycles, they recommend the label that matches the optimal recycle point to the number of washings (e.g.: 80 washes at 30°C).
— The brand decides how many years the garment must stay in the platform.
— The label is produced according to these parameters.

By preventing microparticle pollution, their solution is aligned with 7 of the 17 UN’s ODS, including:
— Clean water, by improving water quality through minimising the release of hazardous chemicals and materials;
— Sustainable communities, by reducing waste management;
— Responsible consumption, by prolonging the life of the garments as it will be washed less and will facilitate the sound management of all wastes;
— Life below water by reducing riverways and oceans pollution.


Critical consumers, especially Gen Z, are questioning the fashion industry and demanding integer education about the background of the production and resources. The topic’s high degree of complexity often leads to difficulty understanding facts about climate change and the fashion industry’s contribution. Although there is a change in awareness regarding the purchase of sustainable products and conscious consumption, most people do not know how to minimise their environmental impact. This issue is described as the ‘attitude-behaviour gap’ in which “individuals exhibit positive attitudes but fail to execute on these attitudes by engaging in responsible behaviours.” (Gupta, 2006).

The Stitch aims to address this problem with “Seed” (Sustainably Empathised Education), an online guide based on the pillars of design, sustainability and education to turn citizens into conscious consumers. The digital tool is interdisciplinary and provides step-by-step open-source guidance for citizens who do not know how to implement their love of fashion and interest in sustainability in their daily lives.

Seed is based on a revised, circular version of Adam Avramescu’s linear customer education journey. The model raises awareness of the problem, helps to overcome it and provides incentives for long-term motivation by increasing sensitivity to related issues. The tool creates a new narrative on sustainability in fashion by ensuring that the language used is understandable for every entry-level. A shared mindset helps citizens build a long-term value-based and emotional relationship with nature, and care for fashion by using the tool to bridge their attitude-behaviour gap on sustainability through user-centred interaction. Collaborations with companies and brands occur for each programme within the tool (reduce, reuse, recycle, repair and resell). For example, at the beginning of the tool, users answer a questionnaire to analyse their wardrobe, reflect on their shopping impacts and see if they unknowingly support brands that practice environmental and social injustice. This critical reflection is backed up with short videos that help users understand biodiversity in the context of fashion, for example, to connect fashion to nature, followed by an interactive step-by-step guide to responsibly transforming their behaviour for the planet and people.
This project focuses on the dying stage of the production of clothing. It is one of the main sources of pollution when it comes to fashion. As stated by CNN: “according to the World Bank, 17-20 percent of all industrial water pollution is caused by the dying or treatment of garments.” Between a laboratory and a fashion store, this space offers a curation of vintage and second-hand items. The customer participates in the creation of a unique dye to personalize these pieces. The bacteria Streptomyces coelicolor releases pigments that have different hues depending on the pH of the solution. A saliva pH test is performed to determine the pH of the body, then is applied to the solution for each individual.

This means that each garment’s colour will be fully unique. Through personalization, an emotional connection is enabled between the wearer, the clothes, and nature. Customers are directly involved in the story of their clothes. This process manifests how people and clothes are connected and part of nature and offers a new form of self-expression.

The pigments are derived through a natural excretion process, using approximately 500 times less water than traditional dying. Furthermore, there is no need to use harmful synthetic chemicals to fix colours. Another beautiful aspect of bacterial dye is that it is not colourfast. It is possible to dye a piece of clothing with a certain colour that will fade in time. It changes with the seasons and, when the colour has fully faded, you can then dye the clothes again. It offers the possibility to reuse an item but also to be even more in touch with our emotions as they have an impact on the pH of our body. For that reason, the pH you had once can be different the next time you come to dye your clothes. It shows the ephemeral becoming durable, and I am particularly interested in that duality.

In this project, fashion coexists with nature, and bacteria are seen as the co-author in the creation of a clothing piece. This connects with the need for slower and more meaningful connections.

Stefan Mathys: VYN Repairable Sneakers

VYN has an up to 6x longer use cycle than normal sneakers due to its reparability and quality. The impact that has on the environment through waste reduction is significant. VYN is currently working on making the 24 pieces that go into our sneakers more circular by using natural materials that at the end of use can be disassembled and used as a resource in a different form. This is most likely going to be a downcycling process, but it is important to them to take responsibility for the resources after the use cycle as a sneaker.

VYN wants to create a more circular system that starts with transparency in manufacturing, support and repair during the use cycle and taking responsibility by taking back the sneakers at its end of use to re-use all the resources used. Within the fashion industry it all comes down to transparency. They want to be part of wearer’s use journey with VYN Sneakers, supporting them with care masterclasses and self-repair to fulfill the potential for the longevity of our Sneaker through wear, care and repair.

Fashion can’t be a linear buy – use – dispose model anymore. We need to change to a much more circular idea of wear – care – repair and make the most of the resources by using them as long as possible. We need to become owners again, and come away from our consumer habits where we simply consume and don’t think of the before and after.

As owners we care for products, look after them and repair them if needed. For that we need a system change where care and repair become part of each use cycle and VYN actively makes that happen.

Nanrata Tiwari – It’s All Folk

For Brokpas, a yak-rearing pastoral nomad community living in the high-altitude mountains of Arunachal Pradesh, yak is an asset to the rural economy, sacred and central to their culture, religion and social lives. Due to its highly regenerative nature, yak wool is amongst the most ethical and sustainable winter yarns. The yak’s warm wool coat is shed naturally as temperatures rise, and is combed and collected to be spun into yarn. Yaks are neither clipped nor combed for their fibre and are never deprived of their natural habitat.

Yak fibre is carbon neutral and absorbs the same amount of carbon dioxide it produces. It is 100% biodegradable at the end of their life cycle. Moreover, pastoral nomadism is highly efficient in maintaining high altitude ecosystems. Pastoral nomadism is centred on organized herd movements according to seasonal or spatial weather variability integrating domestic animal management, natural resource conservation, and sociocultural organization.

When pastoralism is acted in accordance with indigenous knowledge and practices, it not only maintains biodiversity and natural ecosystems but also sustains local livelihoods. The Brokpa yak pastoralists are facing multiple challenges like geopolitical barriers, temperature rise, shortage of fodder, dwindling of the pure yak population, and a gradually shortening winter. Providing locals with a living in their natural context will organically lead to the continuity and flourishing of their culture. The yak rearing Brokpas, are skilled with traditional handicraft and textiles knowledge like weaving, knitting, pottery, and handmade paper.

“It’s all folk” aims to create a place-based yak economy as an effective approach to create jobs, preserve culturally significant Brokpa practices, revitalize age-old crafting skills and reinvent traditional designs and products. In collaboration with ICAR Indian Council of Agricultural research (ICAR) – National Research Center (NRC) Yak in Arunachal Pradesh, Namrat Tiwari is working on reviving yak wool and repurposing them into market friendly products that are climate beneficial, compostable and regenerative by nature. She has been conducting field-based research with their team to understand the cultural capital and textile wealth of the Brokpa pastoralists in the Dirang region of Arunachal Pradesh.

Yifei Xu – TAG IT

Under the current climate of over-consumption, apparel products have become something to be easily thrown away. The preciousness of clothes is so commonly neglected that we almost forget how clothes can hold powerful emotional associations. It is the attached memories that make consumers value what they own and keep their clothes for a longer period. TAG IT is an app that allows users to track their ownership, attach new memories, and constantly revisit the past to cultivate emotional bonds to their fashion items.

The app functions through “tags” to digitalise the analogue clothes, creating a unique identifier for each item, as well as a digital memory collection that encourages users to become conscious of the stories behind their clothes. TAG IT has further potential to connect brands with consumers. Currently in the fashion industry, QR or NFC tags are now commonly used in blockchain technology – but the chain of information is immediately broken once the products are sold. All brands adopting blockchain technology also have their separate platforms, which requires their consumers to be highly loyal to the brand DNAs to interact – but the chain of information is immediately broken once the products are sold. All brands adopting blockchain technology also have their separate platforms, which requires their consumers to be highly loyal to the brand DNAs to interact on multiple channels. TAG IT, however, takes a different approach: it starts from a consumer-facing interface that invites consumers to participate in the ongoing journey, while bridging the gap between brands and consumers behind the scene. Under the current system, clothes don’t have any embedded identifier, so users need to attach the QR codes manually. However, TAG IT also calls for item-level tagging from brands, so that more NFC tags will be readily attached from now on, moving towards a future where traceability is integrated into the entire product lifecycle.

In addition to individual behaviour, TAG IT also demonstrates a collective pattern of behaviour through a community that constantly reintegrates slow fashion and sustainable living. Through peer-to-peer interaction, resonating memories can be shared; mutual affection for objects can be celebrated. With the tracked record, when an item is resold or exchanged on TAG IT, it serves as a vehicle that carries on the ongoing journey, attaching further meanings when it reaches the next owner.
If you have used this Guide to support your sustainability practice, we’d love to hear about it.
Contact us via fashionvalues@arts.ac.uk

Fashion Values
Fashion Values is an educational programme ideated and developed by Centre for Sustainable Fashion (CSF), UAL, in partnership with Kering, IBM and Vogue Business.

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