



THE ANATOMY OF ACTION

FOR ACTIVATE SUSTAINABLE LIVING
DATA VALIDATION REPORT

RESEARCH OVERVIEW AND DATA VALIDATION REPORT ON THE DEVELOPMENT OF EVERYDAY ACTIONS FOR
ENACTING SUSTAINABLE LIVING AND LIFESTYLES BASED ON MICRO ACTIONS THAT CAN LEAD TO MACRO CHANGE

JUNE 2019



THE INITIATIVE

This initiative set out to research and develop an action map that connects tangible everyday actions to the Sustainable Development Goals (SDGs), and develop a set of achievable high-priority lifestyles areas where micro actions taken by individuals will contribute to sustainable macro changes in the economy and society at large.

The project saw the identification of everyday actions based on recent best-practice scientific data and aligned with clear actionable outcomes. This document summarizes the research that informed the development of the Anatomy of Action designed to help make sustainable living tangible, actionable and irresistible.

www.AnatomyofAction.org

#AnatomyOfAction

ACKNOWLEDGEMENTS

This initiative was developed to support the collaboration between the [United Nations Environment Programme](#) and [The UnSchool of Disruptive Design](#), “who work to promote sustainable leadership and living through uniquely disruptive approaches to activating change”.

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WELCOME

There is no shortage of global environmental issues and they can sometimes feel overwhelming, but there is a movement underway towards a sustainable future, whereby individuals all over the world are taking micro actions that when copied and replicated by others, accumulate to have a positive impact on the planet and help to orientate the economy.

Every choice we make has an impact. This we each have the potential to either reinforce undesirable outcomes or to help path the way towards more sustainable solutions, so that they become normal parts of everyone's daily lives and help bring about a better future.

That's the purpose of the Sustainable Development Goals (SDGs), to support the rapid transition away from old, polluting, inequitable, and unsustainable ways of meeting human needs, toward more regenerative, thriving, and positive societies. I came up with the AoA concept as a way to quickly reference everyday actions that we can all take in our everyday lives to have a positive impact, no matter how small it seems

The AoA presents everyday lifestyle swaps which help anyone transition from damaging daily actions to more sustainable ones. These swaps help achieve the SDG's and move us towards a more circular economy

All actions in the Anatomy of Action are some of the most effective undertakings an individual can make to contribute to this transition to a more equitable and sustainable future. They are framed as lifestyle swapes and are intended to not be dogmatic instructions, but more invitations to making different choices based on what means you have to do so.

Course there are many more actions you can take! Our list is by no means an exhaustive account of all the aspects of our daily lives that we need to tackle in order to meet the SDGs. But it's a great starter list and the memetic reference of all the everyday actions you take with your hands, offering a helpful reminder of swapping out unsustainable lifestyle choices everyday.

Dr. Leyla Acaroglu, June 2019

CONCEPT OVERVIEW

The **Anatomy of Action** outlines everyday lifestyle swaps that individuals can make to support the growing shift toward global sustainability.

Each of us makes choices that have impacts on the world around us. Since we often use our hands to take these actions, the simple concept of the Anatomy of Action is a visual reference to a hand. This supports easy identification and memory around the everyday swaps you can do from unsustainable to more sustainable lifestyle choices

There are thousands of possibilities for lifestyle swaps that are more sustainable than the current mainstream status quo. We combed through them, looked at recent evidence and then refined the list to a set of high-impact, easy-to-remember actions that anyone, anywhere can take everyday to create positive ripple effects

Evidence shows us that if enough people start to adopt the changes outlined in the Anatomy of Action key lifestyle areas of **food, stuff, money, move, and fun**, then the global momentum of collective action will help shift the economy and address pressing social and environmental issues

Individual changes help change the local and global economy (which responds to consumer demand) and have impacts across the entire supply chain and help to normalize new actions for those around us - creating a change chain reaction. Furthermore, many companies and governments respond to consumer preferences so these choices can help shift what products and services are available.

If we all change the way we eat and buy, how we invest money and move, and what we do for fun and aspirations, we can change how our world works for a better future

THE ANATOMY OF ACTION INITIATIVE

The Anatomy of Action (AoA) initiative is the result of a collaboration between [UN Environment](#) and [The UnSchool](#) which set out to research and develop an action map that connects tangible everyday actions to the [Sustainable Development Goals](#) (SDGs). The research resulted in an action map of achievable high-priority lifestyles actions that taken by individuals will contribute to more sustainable shifts in the the economy and society at large.

The AoA is based on research conducted in the last 5 years and aligns this data to actions in main lifestyle domains that have the greatest impact. It is a contribution to the [One Planet Network](#) Sustainable Lifestyles and Education Programme and its global efforts to promote more sustainable living.

The research conducted informed the creative development of the Anatomy of Action concept and the campaign assets outlined in this Social Media Manual.

The content created for the AoA is intended to support those interested in taking action by further building and expanding on the movement towards a sustainable and regenerative future. This media manual is intended for influencers and people engaged in disseminating content on social media.

In the following pages you will find all the information you need to help activate change through this initiative.

Thanks for being a part of a positive future, by taking action today!

www.AnatomyofAction.org

#AnatomyOfAction

5 EVERYDAY AREAS OF ACTION

We all eat food, buy stuff, spend money, move in our communities, and like to have fun. These are the five main lifestyle areas where each human has an impact and where you can make choices to have a more positive impact on the planet!

These five areas of action form part of our everyday living needs and lifestyle choices that hold the potential, if enough people swap their actions, to support the global changes we need to achieve the Sustainable Development Goals.



THE ANATOMY OF ACTION



THE ACTIONS ANYONE CAN TAKE

These are the everyday actions that anyone can take to adopt a more sustainable lifestyle.

This document outlines the data and research that supports this shortlist.



PROTEIN SWAPS

USE ALL YOUR
FOOD

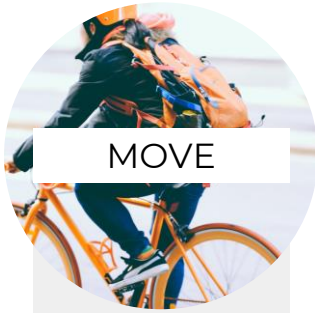
GROW YOUR
OWN



BEYOND
BUYING

FASHION SLOW
DOWN

DITCH
DISPOSABLES



KEEP ACTIVE

SHARE YOUR
RIDE

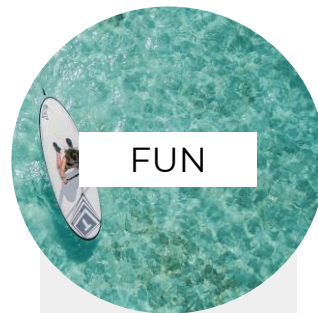
GO CLEANER



ETHICAL
INVESTING

DIVESTMENT

ENERGY
POSITIVE HOME



ENJOY THE
JOURNEY

STAY CURIOUS

CHOOSE
EXPERIENCES

FOCUS AREA: SDG12

SDG 12 (Responsible Consumption and Production), is a critical focal point to address most SDGs, whether it be biodiversity impacts from material extraction, marine impacts from plastic pollution, or the impacts on climate change from the demands of disposable lifestyles on the consumer goods production. These are all directly impacted by the drivers and demands of consumption patterns globally.

From poverty alleviation to clean water accessibility, all the SDGs are impacted by global supply chains, which emphasize the social and environmental impacts associated with delivering goods and services into the economy.

To unravel status-based consumption patterns (Kim and Jang, 2014), we must address individual choices and how they can influence producers to change to more circular and sustainable means of production."

**12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION**



Goal 12.8 sets the target: "By 2030 ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature."



THE PRIMARY RESEARCH

HERE WE OUTLINE THE RESEARCH AND THEORIES THAT FORMED THE FOUNDATIONS
FOR THE DEVELOPMENT OF THIS INITIATIVE

RESEARCH OVERVIEW

In order to establish tangible, evidence-based actions that can be universally adopted to support a sustainable lifestyle (SL), the research team conducted a multi-channel desktop study of the organically-growing movements that support sustainable lifestyles.

Initially, over 80 movements were identified and broken into five main categories of food, stuff, money, movement, and fun. Key actions or activities undertaken within each movement were identified and mapped; these were then correlated with the lead researcher Dr. Leyla Acaroglu's knowledge of SL actions within each movement to create a matrix of actions.

These extensive lists across individual, business, and policy levels were then cross-referenced for scientific validity, checking to see what actions do indeed have the weight of impact when enacted, and consequently, the list was refined to develop the presented actions map.

United Nations and other expert reports were reviewed, and external validators sought to validate the actions. Life cycle data was sought to map actions and opportunities for tangible impact reductions through individuals connected to the larger impacts on the economy. Furthermore, a focus on how to support societal changes was explored in order to strengthen the creative development of communication elements of this initiative.

Once the movements and actions were identified, the categories were further broken out, and a global analysis of social influencers and local heroes was undertaken. The data presented in this report was drawn from the last 5-10 years of scientific explorations of cause and effect relationships on consumption choices and the economic shifts. The research identified what can fit within the parameters of tangible and relatable actions that anyone, anywhere can adopt in an everyday context.

RESEARCH LIMITATIONS

Data was restricted to focus on the the last five years of peer-reviewed reports to maintain the most relevant and updated scenarios. However, in some categories, it was harder to find data. Thus, the research years were extended back to 10, and some non-academic sources were explored.

The main issue with the reviewed and available data is the skew toward climate change as the main impact category when looking for validating the potential for the impact to have positive outcomes. No qualitative data was gathered for this research; it would certainly benefit from an interview data set from multi-regions to gain an understanding on the barriers and opportunities to swaps to SL, and this would also be a good further development of this research.

The global aspect of the research meant that the listed actions do not necessarily ensure that they are all impactful in all segments of the population in all parts of the world, but rather intends to suggest a global list of recommended options.

It must also be acknowledged that the area of sustainable production and consumption touches on a vast array of scientific arenas, and that the scope of this study was to review this broad socially impactful space from the perspective of individuals and actions that they can take that will lead to global impacts. While the perspectives of policy decisions and business actions were identified, they were done so from the perspective of the individuals seeing and connecting to their everyday choices.

Furthermore, time limitations reduced the number of available data sources that could be reviewed. Triangulation on all major points presented here was sought, and in most cases able to be achieved. However, the research team wants to highlight that the extensive body of research reviewed and synthesized would only be scratching the surface on this far-reaching problem and opportunity arena.

RESEARCH OUTCOMES

The research resulted in three areas of interest related to this initiative:

1. It reinforced certain identified actions and allowed for others to be replaced with more impactful ones.
2. It enabled an interesting assessment of where impacts occur as people progress socially, especially as more wealth is generated and the individual choices around what to do with this 'disposable income' are made.
3. It allowed for further investigation of the behavioral and social implications of activating change, which supports the formulation of the content approach.

THEMES	INCLUDES
1. FOOD	Impacts of fresh and packaged food waste, food production, food waste in landfill, embodied energy impacts from food production, packaging, transport, gardening and self-food production, sustainable farming techniques, food consumption options/choices, food sharing systems, organic waste, impacts of meat production, meat-free movements, alternative proteins
2. STUFF	Design and production of everyday products, furniture, clothing, homewares, electricity consuming products, high end technology, cleaning products, landfills and end-of-life management, packaging, reduction, reuse, repair movements, plastic waste, circular economy, fashion, zero waste trends, minimalism, capsule wardrobes, anti-hauling, consumption reduction, plastic free,
4. MOVEMENT	Transportation industry, long and short haul modes of transportation, impacts of global energy sources, alternative energy, community energy production, energy-saving activities, modes of generating power, slow transport, human- powered movement, public transport, shipping, walking/riding, city design, health benefits of mobility, electric transportation systems, ride sharing
3. MONEY	Banks, investment, divesting from unethical investments, consumption concepts, global impact investing, fundraising, micro-investing, home consumption choices, travel choices, trade-offs, swapping energy providers, home design, sustainable energy options, small scale solar, energy efficiency
5. FUN	Wellbeing, exercises, engagement with nature, design of our cities, diversity of living approaches, air pollution, work/life balance, working styles, recreational activities, water access and plastic bottles, travel, tourism, experience economy, vacations/travel, learning, experiences over stuff

Table 1 shows the lifestyle themes that were explored and the subsets that influence the motivation research and set of actions that were explored through the literature review to refine and develop the set of draft actions.

SUSTAINABLE LIFESTYLES

A **sustainable lifestyle (SL)** is defined by UNEP (2016 and 2010) and supported by the One Planet Network Programme on Sustainable Lifestyles and Education as “*a cluster of habits and patterns of behaviour embedded in a society and facilitated by institutions, norms and infrastructures that frame individual choice, in order to minimize the use of natural resources and generation of wastes, while supporting fairness and prosperity for all.*”

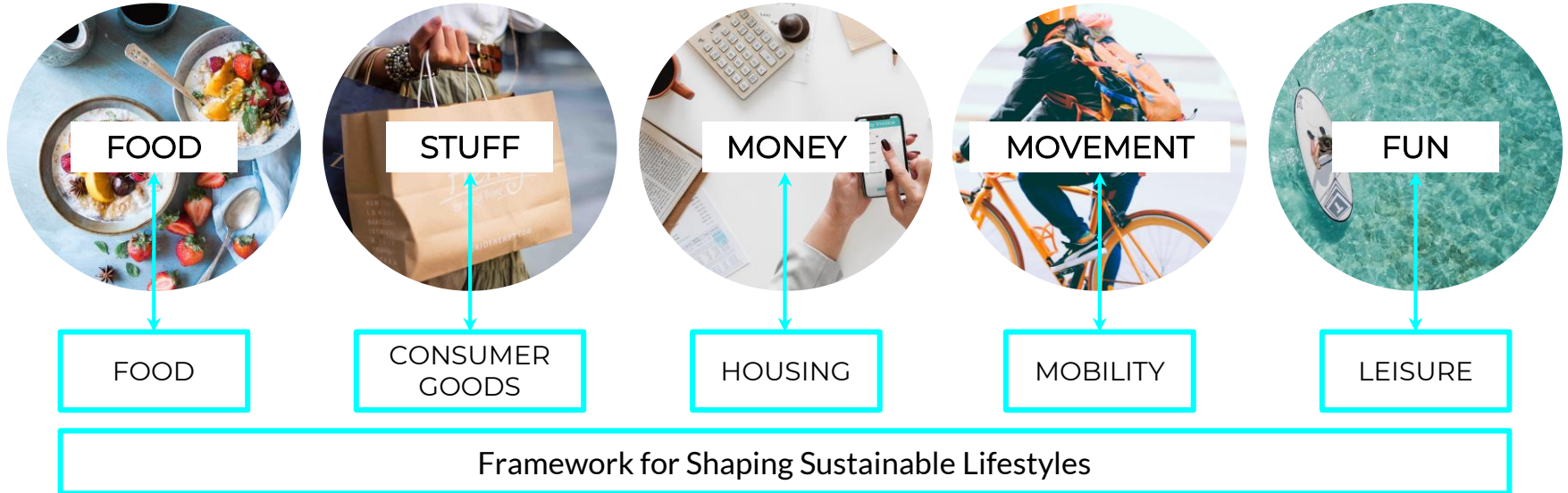
Creating sustainable lifestyles and supporting adoption of the multiple facets of everyday decision making and access to alternative consumption choices that make up an SL requires challenging social normative practices, along with redesigning the systems that reinforce and encourage dominance of unsustainable lifestyle choices.

This requires rethinking our ways of living, specifically around what services and products we invest in to support and organize our everyday lives. This brings many questions and implications for the ways humans meet their everyday needs today and in the future, affecting how we socialize, share resources, educate our communities, and develop our personal and collective identities.

At the micro level, this is about transforming the choices individuals make as they operate and contribute to the economy. It is about finding ways of supporting a better understanding of the role the natural environment plays in supporting all life on Earth, along with the macro level changes to supply chains, production techniques, product design, and policy development to effect the transition towards a circular and regenerative economy.

FRAMEWORK ON SUSTAINABLE LIFESTYLES

The United Nations Environment Programme and the One Planet Network Sustainable Lifestyles and Education Programme and their partners have produced ground breaking reports and initiatives advancing sustainable lifestyles. This initiative builds on the 2016 report *Framework for Shaping Sustainable Lifestyles*, taking a fun and playful approach to communicating high level actions individuals can adopt to support the SDGs. The five main action areas that this initiative promotes were connected with the themes identified within the Framework for Shaping Sustainable Lifestyles as demonstrated below.



SUSTAINABLE CONSUMPTION

Sustainable consumption encompasses a broad field of propositions that support transitioning away from damaging to pro-environmental design, consumption, and production of goods and service (see Verplanken 2012). There is unprecedented data (Hitam & Borhan, 2012., Akenji et al. 2016) that reinforces how consumption is the driving force behind global environmental damage to all the life-sustaining systems that humans, and all living things, rely on for survival. Climate change [SDG 13], life on land [SDG 15], and life below water [SDG 14] are all dramatically impacted by the ever-rising demands that consumption has on natural resource extraction, water and energy use. Responsible Consumption and Production [SDG 12] is the systemic response.

With the current consumption rates and adding the rising global middle class (Kharas, 2017) all adopting aspirational lifestyles of tech wealth, heavy meat-based diets, disposable product consumption, and more frequent global vacations, is expediting the demand for natural resource exploitation,

which is creating cascading impacts on biodiversity, agriculture, pollution and climate change. With the need for dramatic cuts in carbon emissions, reports on ways of reducing lifestyle carbon footprints based on physical consumption units have revealed several hotspots for action with a “need for reductions of over 80% in greenhouse gas emissions by 2050 from today’s intensity of lifestyles” (Akenji et al, 2019).

Personal lifestyle choices of meat and dairy consumption, fossil-fuel based energy, personal car use, and air travel will all support this transition as they occur in three main areas of nutrition, housing, and mobility.

Based on a domain-specific gap analysis conducted by Akenji et al (2019), the required footprint reductions in the case of developed countries are at least 47% in nutrition, 68% in housing, and 72% in mobility by 2030 and over 75% in nutrition, 93% in housing, and 96% in mobility by 2050.”

SUSTAINABLE CONSUMPTION

There is a fundamental need for systemic restructuring of consumption patterns in order to achieve SDG 12, and by association, many of the SDGs. By focusing on either consumption habits or production techniques alone, we will not evolve the systems-wide adjustments needed to create a widespread activation of SL. These are deeply interconnected; with demand and supply influencing each, however, the tides are changing and consumption choices are shifting towards healthier and more sustainable preferences. The objective here is to highlight and expand on these by validating the benefits of individual actions to support the global shifts needed to bring about the SDGs.

The global policy agenda specifically references sustainable lifestyles, as evidenced by the Paris Climate Change Agreement and the SDGs (2015).

Without dramatic shifts in the way humans meet their needs and live their aspirations, and demand and consume products, and without significant business and political transitions for the delivery of sustainable goods and services, we will continue to pursue a path of consumption-fueled planetary exploitation.

The rise in circular economy as an overarching concept has enabled a leveling-up of the global conversation around meeting humanity's material needs in more sustainably produced ways. By 'closing the loop' on production by seeing outputs as inputs, and internalizing externalities currently not accounted for by the economy, producers can follow a pathway of sustainable production. Along with growing consumer movements like zero waste, we see the influence that agents in society have on each further advancing SL.

ECOLOGICAL FOOTPRINTS

The Ecological Footprint Methodology looks at the amount of “biologically productive area it takes to provide for all the competing demands of people,” mapping the global impacts that individuals have based on everyday lifestyle choices (Global Footprint Network, 2018, and Lin et al., 2018).

The Global Footprint Network, in collaboration with WWF, publishes a biannual Living Planet Report which looks at the state of global biodiversity impacts based on the ecological footprint methodology. In 2018 they released their 20th anniversary edition, and the key findings included:

- There has been a 60% decline in species population sizes between 1970 and 2014, with the biggest drivers being attributed to overexploitation and agriculture, both of which are the result of continually increasing human consumption.
- The largest contribution to our global Ecological Footprint is carbon emissions from fossil fuel burning (60%).
- Land degradation significantly impacts 75% of terrestrial ecosystems, reducing the welfare of more than 3 billion people, with huge economic losses.
- Overfishing and plastic waste are threatening our oceans, while pollution, habitat fragmentation, and destruction have led to catastrophic declines in freshwater biodiversity.
- Because of ever-expanding agriculture driven by spiralling human consumption, our Ecological Footprint has increased by 190% over the past 50 years.
- Creating a more sustainable system will require major changes to production, supply, and consumption activities.

CLIMATE IMPACTS

In 2017, Paul Hawkins released the book *Drawdown—The Most Comprehensive Plan Ever Proposed to Reverse Global Warming*, which outlines 100 substantive solutions to global warming, actionable within the next 30 years.

Table 2 provides a summary of the top ten actions. The bolded items correlate to the actions developed for this initiative, as they are connected to individual choices people can make.

1. Refrigerant Management	Mainly for commercial settings; thus industry and policy adoption is required for the large-scale change required for this to be effective
2. Wind Turbines (Onshore)	Allows for the individual action of swapping energy providers and financially supporting renewable energy. Connects to Divesting.
3. Reduced Food Waste	Changing individual actions in shopping and consumption habits, along with more self-food production and zero waste food prep. Connects to Use All Your Food and Grow Your Own.
4. Plant-Rich Diet	Individual actions are easy to take by swapping food preferences, adopting a plant-based diet or swapping proteins. Connects to Protein Swaps.
5. Tropical Forests	On one hand, this is mainly industry and government change required, but individuals could also change their consumption preferences to support industries that are protecting forests and perhaps support genuine eco- tourism projects.
6. Educating Girls	Mainly government level changes required, but also through micro-investing initiatives
7. Family Planning	Individual actions to opt to have a smaller or no family, adoption, birth control education, etc.
8. Solar Farms	Individual action to divest from standard electrical suppliers and support renewable energy. Connects to Ethical Investment.
9. Silvopasture	Industry and policy changes required to support agricultural practice changes
10. Rooftop Solar	Individual action to invest in personal rooftop solar or investing in micro programs to supports others to do so. Connects to Energy Positive Homes.

Table 2: Top 10 Carbon Impact Reduction Areas from Drawdown, with commentary and bolded items relating to the action set from this research with connections to the actions we suggest outlined.



THE CHANGE APPROACH

SUMMARY OF BEHAVIORAL AND SOCIAL SCIENCE RESEARCH
THAT INFORMED THE APPROACH OF THIS INITIATIVE

INTRODUCTION

When exploring a topic as broad as sustainable consumption and production, it's crucial that the social and cognitive aspects of the desired changes are examined in parallel to the impacts of a cumulative set of approaches.

Further to the action sets, the last 10 years of behavioral sciences data were assessed, and key elements were selected in supporting the decisions around impacting individual choice making and advancing pro-environmental behavioral shifts.

The Anatomy of Action approach looked at a broad body of research and draws on a series of underlying cognitive and social change approaches that broadly fall under the umbrella of social practice theory and behavioral economics.

One key area to be cognizant of is the role that cognitive bias and social norms play in impacting our day-to-day life choices. Biases are universal errors in reasoning that impact the decisions we make everyday.

From confirmation bias and choice paralysis to loss aversion, human decision-making is influenced by our biases (Evans. 1989).

Social norms (Hechter. 2001) are the informal understanding of appropriate social behaviors that subtly govern societies. They differ from place to place, but have similar impacts by providing the social cues of what is expected and how a person should behave in order to 'fit in' — essentially dictating what is 'normal' and what is not. Most recently, we have seen a significant shift toward the normalization of unsustainable lifestyle choices, such as hyper-disposability.

Effective sustainable living initiatives have the opportunity to present counter offerings of dominant social norms, or enhance the bright spots to encourage the expansion of SL, such as supporting the organically growing movements for zero waste lifestyles and low carbon living. Shining a light by expanding and amplifying these new social norms is one such approach this initiative has taken.

SOCIAL PRACTICES

Anthony Giddens' Structuration Theory (1991) and Elizabeth Shove's Social Practice Theory (2012) both speak to the notion that change occurs when agents within a system are enabled to alter their practices, changing what is considered as culturally accepted, which in turn affects the practices of others and encourages a cascade of changes that affect the conventions of society.

Social norms and the structural forces that reinforce them cannot be underestimated when seeking to address cultural shifts, of which SL must acknowledge that, at its core, is a seismic shift toward the normalization of sustainable consumption practices, influencing production via the mechanisms of economic and cultural trends.

Social norms are pervasive and often identified as key influencers within the context of everyday life's decision making and require constant recalibration to the evolving practice of the day. Thus, there are many opportunities to impact new normative practices.

In an interesting study on what motivates behavioral shifts in the simple act of towel use in hotels, performed by Goldstein et al (2008,) the researchers point out that "a wide variety of research shows that the behavior of others in the social environment shapes individuals' interpretations of, and responses to, the situation."

The study found that when location-specific social norms were used to motivate pro-environmental behaviors, they were able to increase compliance. In this case, adoption of the practice of opting to reuse a towel was increased by a social proof that others in the same hotel room had performed the desired action. Instead of a sign saying, "The majority of guests reuse their towels," the more effective prompt said, "The majority of guests in this room reuse their towels." The desired behavior was seeded with a marker of social location-specific behavior to plant the normative expectation .

COGNITIVE DISSONANCE

The gap between what we say we will do and what we actually do is referred to as cognitive dissonance, and this is a prevalent aspect when considering any form of behavioral economics.

Specifically, research has found that just caring about the impact of consumption choices does not necessarily change behaviors when it comes to accessing convenient consumption outcomes. The cognitive dissonance between what people say they will do and what they actually do is very prevalent in research relating to pro-environmental behaviors.

Barkan et al (2015) raises the notion of ethical dissonance which “arises from the inconsistency between the aspiration to uphold a moral self-image and the temptation to profit from unethical behavior.” When confronted with this, people often find ways to redefine the unethical behaviors as ‘non’ violations based on pre-violation justifications.

McDonald et al (2015) found this in choices around air travel. People who identified as pro-environmental decision makers often post-rationalized the choice to continue to fly even though they knew it was damaging. This relates to “The Dragons Of Inaction” concept presented by a Gifford (2011) study on the psychological barriers to climate positive actions, which resulted in seven key disassemblers: “limited cognition about the problem, ideological worldviews that tend to preclude pro-environmental attitudes and behavior, comparisons with key other people, sunk costs and behavioral momentum, discredence toward experts and authorities, perceived risks of change, and positive but inadequate behavior change.” In more recent research, Gifford and Chen (2017) explored these psychological barriers to climate-positive food choices and determined that interpersonal influences, along with denial and tokenism, played a role in people’s individual choices.

VALUE ACTIONS GAPS

There are many studies that explore the gap between the values, attitudes and knowledge of environmental and ethics in purchasing decisions. The value-action gap (Blake 1999) proposed is one possible reason why people who present as ethical consumers indeed end up not following through with this motivation when making purchasing decisions. Shaw (et al. 2016) explore the attitude-behavior gap, concluding that “caring about” does not necessarily lead to “care-giving.”

Sudbury-Riley and Kohlbacher (2016) present the attitude-behavior gap (and Auger and Devinney, 2007), when looking at the disconnect between the ethical intentions that people have and the reasons why they often are not acted upon, even if the individual has a strong personal intention to do so. Discussing cognitive dissonance of the ethically-minded consumer, they say: “Far more consumers profess to care about ethical issues than actually purchase ethical products”.

Despite this value-action gap, Babutsidze and Chai (2018) found that people often imitate peer actions replicating pro-environmental behaviors. They caveat this by saying that non-visible pro-environmental behaviors did not appear to have any spillover effect, thus reinforcing the value-action gap and reminding us of the importance of demonstrating and sharing the successes of these actions as part of the seeding of shifts in social practices.

A 2013 study by Euromonitor found that up to half of the consumers in the US who stated they care about ethical issues, only have 15% correlation between caring and their actual consumption habits. This attitude-behavior gap is recognizable across many nations and presents an important issue to be cognizant of when designing campaigns that seek to motivate or leverage behavioral shifts for sustainable living.

SIMPLE AND PAINLESS

Researchers Thøgersen and Crompton (2009) examined the hypothesis that “simple and painless” individual actions (such as turning off lights or riding bikes) increases general pro-environmental behaviors. They found the assumption that “the spillover effect”, of one action promoting another similar action, or the ‘foot in the door’ concept of getting people to make small shifts to then move onto bigger actions, can often not be the case.

Their research identifies that the cumulative effect of simple and painless actions, even if people were to do them, does not create a significant enough impact to make the change that is now necessary. And that there can even be a negative backlash to this, where the small actions seem insurmountable against the magnitude of the environmental problem, such as changing light bulbs in an attempt to curb climate change.

This can increase the perception by the individual that these simple actions are not actually contributing to the necessary big systems change that need to occur in order to fix the problem that motivated the actions to start with, and thus results in further disengagement with the desired behavior change.

To make significant impacts, they argue, the changes must also be big. Speaking to those who both already believe in taking action, as well as those who so far have been disengaged from doing so, they must be validated, and visible methods of effecting tangible change need to be reflected not only in individual actions, but clearly connected to governmental and organization changes that will support the shifts needed to address the issues.

There needs to be a clear relationship between individual actions and the bigger impact that these will have.

HABIT DISRUPTIONS

Disrupting normalized habits by offering alternatives to dominant social cues (Carden & Wood. 2018) offers opportunity for SL activation. Encouraging swaps from an existing norm, such as utilizing a reusable coffee cup instead of requesting a disposable one, requires an opportunity to experience the disruption of an existing habit and the replacement with the new one in a non-confrontational environment; if the swapper finds the experience easy and the new norm is desirable, then they are more likely to adopt the new practice. Fuji et al (2001) found this to be the case when looking at the change effects of temporary freeway closure on commuters.

People who used their cars frequently were more likely to opt for a longer route rather than swapping to a more efficient public transport option. But in some cases, car users opted to try the public transport option, and after finding that this option was not as long and painful as they had assumed, they continued with this new behavior after the freeway closure.

This 'habit discontinuity hypothesis' states that habit-changing interventions are more likely to be effective when they are delivered during life changes (Verplanken and Roy, 2016). Furthermore, interventions that encourage habit swaps are often more successful when the environment in which the habit is performed is altered (Carden & Wood 2018). The moments throughout people's lives when changes occur, such as starting a new job, moving houses, having a child, etc. — these life course transitions offer perfect intervention points for supporting habit changes. Designing experiences that alter decision structures can help the formation of new habits, as many habits are the product of the interaction of persons and their environments (Carden & Wood 2018), resulting in cues that trigger actions.

Thus, considering how to target SL actions at points-of-life changes, like from new workplaces to vacations, could present an opportunity for increased uptake in action adoption.

CONCLUSION

The fields of behavioral, social and cognitive sciences offer many insights and opportunities to establish new patterns of consumption, while pointing at cultural interventions as spaces to advance and normalize sustainable living.

The small selection of concepts, approaches, and research summarized here offers an insight into the motivations and underlying approaches that this initiative has drawn upon, with hopes that this supports further research and exploration of initiatives that take a social practice based intervention approach to advancing SL.

Human behavior is complex and riddled with nuances that build on complex cultural and social factors. Therefore, the attempt to make universal solutions is weakened by the reality of the diversity of the human experience.

As Kollmuss and Agyeman (2002) point out, “The question of what shapes pro-environmental behavior is such a complex one that it cannot be visualized through one single framework or diagram.” The Anatomy of Action is one, of many, different cultural interventions seeking to disrupt the status quo of hyper, unsustainable consumption by offering a set of actions that, when enacted by many, will have positive ripple effects through the economy. The critical point is the amplification of these actions and the normalization of such new pro-sustainable practices.

Changes requires many different propositions of alternative narratives practices, propositions, and actions. This is just one set of contributions to the vast and fascinating field of activating sustainable change.



THE EVERYDAY ACTIONS

DATA SET WITH SUB ACTIONS AND THE RELEVANT DATA DEMONSTRATING
THE NEED AND OPPORTUNITY FOR CHANGE

THE ACTION MAP

The following action map was developed as a result of the research conducted. The main actions and sub actions mapped in each category were developed and refined based on the data and then cross referenced. Experts in the field of SL contributed inputs and the the final action lists were developed by the UNSchool, based on this recent knowledge.

The content was developed with inputs from UNEP and stands as an list of best practice actions individuals can take to enact a more sustainable lifestyle.

The research on cognitive and behavioral economics influenced the develop of the Anatomy of Action Concept as a vehicle to easily carry the many actions outlined here. The concept is for an easy to remember 'memic' reference that is cognitively activated when someone looks at their hands. This should trigger a reminder to disrupt their own habits as they go about their day.

The intention is to build and expand on the existing organically evolving movements and add a new approach to the field of sustainable production and consumption, specifically to support the activation of SDG12.

As the research shows, there needs to be a clear relationship between individual actions and the bigger impact they will have, which is why we have developed the set of resources from videos, shareable graphics, and this data validation document.

There is a great opportunity to collaboratively overcome the value-action gap by sharing successes of actions as part of the seeding of shifts in social practices, and that's why we developed a reusable content set to enable people to adopt and individualize the concept of the Anatomy of Action to their own personal and cultural context.

THE DATA SET

In the following pages you will find the action sets and a selection of quotes from multiple sources that reinforce the reason why these action areas were selected and how enacting these lifestyle swaps will help bring about positive change.

It's important to acknowledge that the data set presented here has been gleaned from many different studies and sources, which all have their own methodologies, study conditions, approaches, and consequently, differing outcomes.

Multiple sources were reviewed to provide a cross-sectional perspective of the current impact and opportunity data sets that exist around Sustainable Living.

The quotes selected and presented here against each of the action areas are intended to offer a snapshot of the many different perspectives of the degree of the current impact and of the potential positive outcomes that can occur when these actions being taken.

All sources are provided so that the reader can follow the trail and explore the research in more detail themselves.

The quality of the data fluctuates; though we have restricted the research to peer-reviewed data, we can not validate the approach taken by the researchers nor the full validity of data sets used to inform the outcomes that they have come to.

However, in saying this, we stand behind the actions outlined here as these were developed, cross referenced, reviewed, and validated in collaboration with UNEP experts as opportunities to contribute to the SDGs and advance sustainable lifestyles globally.

Although not all actions have the same degree of impact in all locations, the potential for these to offer significant shifts in the economy when multiplied by many people is clear.



FOOD ACTIONS

CONNECTING ACTIONS TO IMPACTS
DATA MAPPING AND DEMONSTRATING THE IMPACT POTENTIAL

1. PROTEIN SWAPS: OVERVIEW



HIGH LEVEL ACTION

Reduce or eliminate meat and animal product consumption habits and adopt a more plant-based diet

EVERYDAY ACTIONS

1. Swap animal protein for more plant-based proteins
2. Diversify your diet and cook more at home
3. Eat what is seasonally available
4. Opt for locally produced foods, seek out local farmers and markets that offer sustainable produce
5. Talk with your friends and family about healthy and sustainable food options to encourage them to swap their diets too
6. Become an everyday/weekday vegetarian vegan or flexitarian
7. Try and have a rainbow of vegetables on your plate in every meal

WHY THIS HELPS

Swapping meat-centric food habits for meals with different protein sources is good for your health and for the environment. In many parts of the world this is already a way of life. Today, the animal industry is the number one consumer of freshwater and is responsible for 18% of total greenhouse gas emissions. The best way to re-shape our food systems is for people to consume less meat. By swapping to a more vegetable-friendly diet and being more selective in where your meat comes from (adopt a flexitarian diet!), you can improve your health, lower GHG emissions and reduce biodiversity loss.

1. PROTEIN SWAPS: STATS



"Livestock and their byproducts actually account for at least 32,564 million tons of CO₂e per year, or 51 percent of annual worldwide GHG emissions."

(Goodland, 2009)

"...dietary change can deliver environmental benefits on a scale not achievable by producers. Moving from current diets to a diet that excludes animal products has transformative potential, reducing food's land use by 3.1 (2.8-3.3) billion hectares (a 76% reduction), including a 19% reduction in arable land; food's GHG emissions by 6.6 (5.5-7.4) billion metric tons of CO₂e (a 49% reduction); acidification by 50% (45-54%); eutrophication by 49% (37-56%); and scarcity-weighted freshwater withdrawals by 19% (-5 to 32%)"

"...(environmental) impacts of the lowest-impact animal products typically exceed those of vegetable substitutes..."

(Poore & Nemecek, 2018)

The animal industry, through its reliance on plant-based feed, is the number one consumer of freshwater, and responsible for 18% of the total worldwide greenhouse gas emissions.

(HLPE, 2014)

"To reach an environmentally sustainable solution, animal-based foodstuffs should be partially replaced with fruits, vegetables, legumes, and cereals, according to nutritional guidelines".

(Rosi et al. 2017)

"Global meat production has increased rapidly over the past 50 years - as seen below, total production has grown 4-5 fold since 1961. The chart below shows global meat production by region, measured in tonnes."

"Regionally, Asia is the largest meat producer, accounting for around 40-45 percent of total meat production. This regional distribution has changed significantly in recent decades. In 1961, Europe and North America were the dominant meat producers, accounting for 42 and 25 percent, respectively. In 1961, Asia produced only 12 percent. By 2013, Europe and North America's share had fallen to 19 and 15 percent, respectively."

(Ritchie & Roser, 2018)

"Food production and consumption are responsible for 19-29% of the human-induced greenhouse gas (GHG) emissions, 60% of the terrestrial biodiversity loss and 70% of fresh-water use."

(United Nations System Standing Committee on Nutrition, 2017)

"...positive health effects, ranging from <1% reduction in estimated mortality risk for vegetarian diets, to 19% for vegan diets..."

(Aleksandrowicz et al, 2016)

"GHG emissions among meat-eaters are approximately twice as high as those among vegans."

(Scarborough et al. 2017)

"There has been a considerable increase (62%) ... in the available food consumption of meat worldwide, with the biggest increases in the developing countries (a threefold increase since 1963)"

(Kearney, 2010)

"Global meat production has increased rapidly over the past 50 years...total production has grown 4-5 fold since 1961."

(Ritchie & Roser, 2018)

1. PROTEIN SWAPS: STATS



“If every American made one dietary change: substituting beans for beef, even if nothing about our energy infrastructure or transportation system changed — and even if people kept eating chicken and pork and eggs and cheese — this one dietary change could achieve somewhere between 46 and 74 percent of the reductions needed to meet the 2020 greenhouse-gas emission target pledged by President Barack Obama in 2009.”

(Harwatt et al., 2017)

“It was once thought that certain combinations of plant foods had to be eaten at the same meal to ensure a sufficient intake of essential amino acids. While nutritional adequacy can be maintained by including a variety of plant foods which “complement” each other in terms of their amino acid profiles (eg, consuming a mixture of grains and legumes or nuts), it is now known that strict “protein combining” is not necessary, provided energy intake is adequate and a variety of plant foods are eaten each day...The body maintains a pool of indispensable amino acids which can be used to complement dietary proteins; this is one reason why strict protein combining is no longer considered to be necessary.”

(Craig & Mangels, 2009)

“Agricultural production is at the highest level it has ever been, but is neither resilient nor sustainable, and intensive meat production is on an unstoppable trajectory comprising the single greatest contributor to climate change.”

(McMichael et al., 2007)

New dietary guidelines released by the Chinese government encourage the nation’s 1.3 billion people to reduce their meat consumption by 50%. China’s vegan market will grow more than 17% between 2015 and 2020.

(Ministry of Health, People’s Republic of China, 2016)

“There’s been a 600% increase in people identifying as vegans in the U.S in the last three years. According to a report by research firm GlobalData, only 1% of U.S. consumers claimed to be vegan in 2014. And in 2017, that number rose to 6%.”

(GlobalData, 2018)

“Over 70% of the world’s farm animals are now factory farmed, including an estimated 99% of US farm animals.”

(USDA, 2017)

“The dietary shift that is needed for basic nutritional health requires a dramatic reduction of consumption of unhealthy foods, such as red meat, by at least 50%, with a recommended daily combined intake of 14 g (in a range that suggests total meat consumption of no more than 28 g/day)...At the same time, an overall increase in consumption of more than 100% is needed for legumes, nuts, fruit, and vegetables.”

(The Lancet Commissions, 2019)

“It is a common myth among both consumers and health professionals that protein needs are difficult to meet on a vegetarian diet...Protein can also be used as energy, but is not the body’s preferred energy source, so this occurs only when the amounts of carbohydrate and fats consumed are insufficient, and can be at the expense of tissue maintenance, growth and repair, and immune function.”

(WHO/FAO/UNU, 2007)

“Asia’s appetite for meat and seafood protein will rise by an astounding 78% by 2050, driven by growing wealth and urbanisation in the region.”

(Neo, 2008)

2. USE ALL YOUR FOOD: OVERVIEW



HIGH LEVEL ACTION

Get organic waste out of trash heaps and landfills to reduce methane, improve soil fertility, and increase equitable access to fresh food

EVERYDAY ACTIONS

1. Design your meals to use up the entire food product
2. Buy only what you can finish or save - don't waste food after all you paid for it. If you throw it away, you are tossing your money in the trash
3. When buying foods, avoid excessive packaging and take your own produce bags
4. Seek out "ugly" fruit and vegetables to give them a life in your meal
5. Manage how you store food to maximize freshness, such as using sealed containers in your fridge and pantry
6. Get (more) into canning, preserves, and freezing to extend food life
7. Make stock out of food scraps
8. Compost your food scraps
9. Share excess food to help ensure everyone has enough (there are many apps that help with this)
10. Find out what's available in your neighbourhood and advocate for communal composting and organic waste processing solutions

WHY THIS HELPS

Eating more fruits and vegetables can add to your health and the sustainability of our food systems but these foods also have high wastage rates. Up to half of the world's food produced is waste contributing to carbon emissions and loss of valuable resources. Using all your food helps reduce food waste which, in trash heaps and landfills, leads to releases of leachates and methane (which is 25x times more potent than CO₂). Food scraps and stale bread are not trash at all! They are filled with the building blocks of life-nutrients, which your body and soil can use (replacing fertilisers and chemicals). So, by getting organics out of open dumps and landfills, we can reduce emissions released into the air and give nutrients back to the soil to produce healthier and tastier plants!

2. USE ALL YOUR FOOD: STATS



"...roughly one-third of food produced for human consumption is lost or wasted globally, which amounts to about 1.3 billion tons per year. This inevitably also means that huge amounts of the resources used in food production are used in vain, and that the greenhouse gas emissions caused by production of food that gets lost or wasted are also emissions in vain."

(Gustavsson et al. 2011)

"The U.K. could save USD 1.1 billion a year on landfill cost by keeping organic food waste out of landfills—this would also reduce greenhouse gas emissions by 7.4 million tonnes p.a. and could deliver up to 2 GWh worth of electricity and provide much-needed soil restoration and specialty chemicals."

(Ellen MacArthur Foundation, 2013)

"Waste prevention measures adopted include home composting, reducing food waste, smart shopping, donating items for reuse, small changes in the home, reducing junk mail and using cloth/reusable nappies. In terms of diverting biodegradable municipal waste from landfill, the biggest impacts can be attributed to food waste prevention."

(Sharp et al. 2010)

"Nearly half of the solid waste produced globally is organic or biodegradable. Much of it ends up in landfills; there, it decomposes in the absence of oxygen and produces the greenhouse gas methane, which is up to 34 times more powerful than carbon dioxide over a century. While many landfills have some form of methane management, it is far more effective to divert organic waste to composting."

(Hawken, 2017)

Composting ranges in scale from backyard bins to industrial operations. The basic process is the same: ensuring sufficient moisture, air, and heat for soil microbes (bacteria, protozoa, and fungi) to feast on organic material. Rather than generating methane, the composting process converts organic material into stable soil carbon, while retaining water and nutrients of the original waste matter. The result is carbon sequestration as well as production of a valuable fertilizer.

(Hawken, 2017)

"40 percent of food in the United States today goes uneaten. This not only means that Americans are throwing out the equivalent of \$165 billion each year, but also that the uneaten food ends up rotting in landfills as the single largest component of U.S. municipal solid waste where it accounts for a large portion of U.S. methane emissions."

(Gunders, 2012)

"Reducing food losses by just 15 percent would be enough food to feed more than 25 million Americans every year at a time when one in six Americans lack a secure supply of food to their tables."

(Gunders, 2012)

Around 2 million tonnes of food is thrown away from households due to 'not being used in time', and for a third of this, the date label is cited as a factor (WRAP 2014). WRAP has estimated that changes to products and labelling could prevent around 350,000 tonnes of avoidable food waste - with a value of around £1 billion a year.

(WRAP, 2017)

"Fruits and vegetables, plus roots and tubers have the highest wastage rates of any food."

(FAO, 2019)

2. USE ALL YOUR FOOD: STATS



"We are committed to going further and faster to reduce, reuse, recycle and cut waste," Gove said. "That's why we are leading the way to move away from being a 'throwaway' society and drive up domestic recycling. We are committed to cementing our place as a world leader in resource efficiency, so we can be the first generation to leave our environment in a better state than we inherited it."

(Gove, 2019)

"We will end the confusion over household recycling."

(Gove, 2019)

"The global response to food waste is fragmented and inadequate, and that the problem is growing at an alarming rate."

(BCG, 2018)

"Waste is set to soar by a third by 2030 when global food waste is estimated to reach 2.1bn tonnes."

(BCG, 2018)

"The creation of an ecolabel, similar to fair trade campaigns, will encourage customers to buy from companies that have committed to reducing waste."

(BCG, 2018)

"Unless urgent action is taken by governments, companies and consumers, the report warns there is little chance of meeting UN targets to halve food waste by 2030."

(BCG, 2018)

"In 2015, over 39 million tons of food was generated in the United States. While Americans dispose of millions of tons of food, the U.S. Department of Agriculture estimates that 11.8 percent of American households - about 15 million households - had difficulty providing enough food for all their members due to a lack of resources at some time during 2017. In many cases, the food tossed into our nation's landfills is wholesome, edible food."

(EPA, 2016) (DoA, 2018)

"We can be leaders in our communities by collecting unspoiled, healthy food and donating it to our neighbors in need. By donating food, we're feeding people, not landfills, supporting local communities, and saving money."

(EPA, 2016)

"An estimated 11.8 percent of American households were food insecure at least some time during the year in 2017, meaning they lacked access to enough food for an active, healthy life for all household members. That is down from 12.3 percent in 2016. The prevalence of very low food security also declined, to 4.5 percent from 4.9 percent in 2016."

(DoA, 2018)

"Home delivery meal kits can slash food waste by more than two-thirds, but suppliers need to switch to reusable packaging to make them environmentally friendly...the good news is that if you have meals that are tailored for consumption, people won't over-buy and you have less food waste. You fine-tune the portions to what people will actually eat."

(Webber, 2016)

3. GROW YOUR OWN: OVERVIEW



HIGH LEVEL ACTION

Grow your own food and connect to where it comes from in order to save money and to reduce transport, packaging, and food waste

EVERYDAY ACTIONS

1. Farm, plant, and grow whatever you can, wherever you can
2. Start or join an urban school or kitchen garden
3. Connect with your food: find out where your food comes from and how it is produced
4. Regrow vegetables like leeks, carrots, and beets in your house in a glass of water before discarding them
5. If you can't grow food yourself, support a local sustainable farmer or shop at farmers markets
6. Promote, develop, and support initiatives in your building, street, or community that increases your access to food-growing space

WHY THIS HELPS

By growing your own food, even if it only replaces some of what you buy, you can connect better to what you eat and reduce the impacts that occur from the growing, packaging, transport, retail practices and food waste. Waste is generated along the entire life cycle of food products from the growing practices through to the supermarket wastage, producing some of your own food has multiple benefits. Access to land and time to garden of course varies, so if you can't grow your own food, consider finding local farmers and support them or join a farmers cooperative. There are many benefits to small scale community agriculture - better food, more nutrients, higher air and soil quality, pollinator plants for bees and insects, and an enhanced sense of community.

3. GROW YOUR OWN: STATS



"30 percent of food is wasted globally across the supply chain, contributing 8 percent of total global greenhouse gas emissions. If global food waste were a country, it would be the third largest generator of greenhouse gases in the world behind China and the United States."

(FAO, 2019)

"Food waste occurs when we don't buy produce because it has blemishes or is misshapen, when we discard food because it is a day past the expiration date, or because we simply never get around to eating it."

(Drawdown, 2017)

"integrating food growing into urban societies is part of a new food geography that addresses increasing demand for fresh food through sustainable food production, whilst also enhancing food security and sovereignty.... It may also promote the health and wellbeing of those involved... particularly if they are elderly or socially vulnerable"

(Church et al 2015)

"Every year, consumers in rich countries waste almost as much food (222 million tonnes) as the entire net food production of sub-Saharan Africa (230 million tonnes)."

(FAO, 2019)

"The average carbon footprint of food wastage is about 500 kg CO₂ eq. per capita and per year."

(Jan et al. 2013)

"Nearly 50% of the plastic waste generated globally in 2015 was plastic packaging."

(Giacovelli et al. 2018)

"urban rewilding" can be good for plants and animals and is also good for people...There's all this evidence about the biophysical ways that nature affects us and has positive effects on our mood, reduces our stress hormone levels and boosts our immune system...It can't just be something that you get on the weekend or during the holiday months. It has to be all around us. It has to be integrated into our daily lives and into the neighborhoods we live in and the office and work environments we spend our time in."

(Beatley, 2017)

"As cities grow and resources are strained, nature can **improve human health and well-being by reducing particulate matter in the air we breathe**(SDG 3); it can **contribute to clean water and sanitation by protecting source water** (SDG 6); and when plans incorporate the needs of local residents, access to nature can help address some of the impacts of inequality (SDG 10)."

(The World Bank, 2018)

"Processing, more durable packaging, and greater usage of coproducts can also reduce food waste. For example, wastage of processed fruit and vegetables is ~14% lower than that of fresh fruit and vegetables, and wastage of processed fish and seafood is ~8% lower. Providing processors and retailers with information about the impacts of their providers could encourage them to reduce waste where it matters most. For products such as beef, distribution and retail losses contribute 12-15% of emissions (fig. S13), whereas the sum of emissions from packaging, transport, and retail contributes just 1-9%. Here, reducing losses is a clear priority."

(Poore & Nemecek, 2018)

"Per capita plastic consumption reached 100 kilograms (kg) in Western Europe and North America.16 Asia currently uses just 20 kg per person, but this figure is expected to grow rapidly" with a growing trend towards consumption in Asia "The region produced 45.6 percent of global plastics in 2013, with China alone producing nearly a quarter of the world's plastic."

(Gourmelon, 2015)

3. GROW YOUR OWN: STATS



"Households are the main contributors to food waste, accounting for 53% (47 million tonnes) of waste in the EU-28 per year."

(Stenmarck et al., 2016)

"Reducing food waste is the number-one thing consumers can do to significantly lessen their climate impact."

(Drawdown, 2017)

"Plastics are the most widely-used material in European food retail, covering 37% of food sold."

(Muncke, 2016)

"... over one-quarter of avoidable food waste every year is thrown away in its packaging, either opened or unopened."

(Ventour, 2008)

"1 billion acres of farmland have been abandoned due to land degradation."

(Drawdown, 2018)

"Methane from agricultural activities, waste management, and energy use is the second largest cause of climate change behind fossil fuels."

(EPA, 2018)

"Only nine per cent of the nine billion tonnes of plastic the world has ever produced has been recycled. Most ends up in landfills, dumps or in the environment. If current consumption patterns and waste management practices continue, then by 2050 there will be around 12 billion tonnes of plastic litter in landfills and the environment. By this time, if the growth in plastic production continues at its current rate, then the plastics industry may account for 20 percent of the world's total oil consumption".

(UNEP, 2018)

"many low-income communities, communities of color, and sparsely populated rural areas do not have sufficient opportunities to buy healthy, affordable food."

(Karpyn, 2010)

"Research has shown that allotment gardens, and other types of community gardens, deliver various health benefits to people, including food access, recovery from stress and fatigue, increased self-esteem, improved life satisfaction and better social networks...In Japan, there are currently estimated to be c. 190,000 allotment plots (80% in urban areas)...As the world's largest mega-city, Tokyo, provides an interesting opportunity to examine the health benefits of allotment gardening...more than 80% of people live in apartments with no access to private gardens, coupled with very low per capita public green space (3 m2)..., 332 people were surveyed to test whether residents who used allotments reported better health across five health outcomes, compared to those who did not..., the results showed that allotment gardeners reported significantly better perceived general health, food access, mental health and social cohesion."

(Soga et al., 2017)

3. GROW YOUR OWN: STATS



“Small-scale organic farming is the only to feed the world.”
(UNCTAD, 2013)

“major changes are needed in our food, agriculture and trade systems, with a shift toward local small-scale farmers and food systems recommended.”

(UNCTAD, 2013)

“Transformative changes are needed in our food, agriculture and trade systems in order to increase diversity on farms, reduce our use of fertilizer and other inputs, support small-scale farmers and create strong local food systems.”

(UNCTAD, 2013)

“There needs to be in-depth shift toward more sustainable, resilient agriculture; livestock production and climate change; the importance of research and extension; the role of land use; and the role of reforming global trade rules.”

(UNCTAD, 2013)

“There's a link between global security and escalating conflicts with the urgent need to transform agriculture toward “ecological intensification”... this implies a rapid and significant shift from conventional, monoculture-based and high-external-input-dependent industrial production toward mosaics of sustainable, regenerative production systems that also considerably improve the productivity of small-scale farmers.”

(UNCTAD, 2013)

“The amount of food lost or wasted every year is equivalent to more than half of the world's annual cereals crop (2.3 billion tonnes in 2009/2010).”

(FAO, 2019)

“Food deserts” are geographic areas where access to affordable, healthy food options (aka fresh fruits and veggies) is limited or nonexistent because grocery stores are too far away...About 23.5 million people live in food deserts. Nearly half of them are also low-income.”

(US DoA, 2010)

“key indicators for the transformation needed in agriculture are:

- Increasing soil carbon content and better integration between crop and livestock production, and increased incorporation of agroforestry and wild vegetation
- Reduction in greenhouse gas emissions of livestock production
- Reduction of GHGs through sustainable peatland, forest and grassland management
- Optimization of organic and inorganic fertilizer use, including through closed nutrient cycles in agriculture
- Reduction of waste throughout the food chains
- Changing dietary patterns toward climate-friendly food consumption
- Reform of the international trade regime for food and agriculture.”

(UNCTAD, 2013)



Being naked is the #1 most sustainable option. We're #2.

STUFF ACTIONS

CONNECTING ACTIONS TO IMPACTS
DATA MAPPING AND DEMONSTRATING THE IMPACT POTENTIAL

1. BEYOND BUYING: OVERVIEW



HIGH LEVEL ACTION

Consider what you need and buy products that will last longer, be used multiple times and are intended to be in the economy for as long as possible before being remanufactured

EVERYDAY ACTIONS

1. Consider what you really need and what impacts these have on the planet before making buying stuff and reduce what you buy
2. Continue or start sharing, swapping things like appliances, tools, clothes, talents and services
3. For new purchases, look into how you can get what you need via a service or a product that lasts longer and has been made sustainably
4. Find things with extended warranties and that can be repaired, and then make sure you repair things
5. Buy beautiful second hand things and find new homes for things you no longer want
6. For technologies and gadgets use them longer, repair and donate them and ensure you find a reliable recycler at the end of their life
7. Delete old emails and other files stored on the cloud (servers use heaps of energy)
8. Offer your technical skills and talents to extend product use, help others, and build a sense of community
9. Recommend and buy from companies that provide spare parts to repair, that offer take back services or use recycled materials in production

WHY THIS HELPS

The circular economy is all about meeting our needs better with less stuff so that the things we buy and use daily will have more value, last longer, reduce disposability and maximize material recapture. In some parts of the world this is already a way of life. While producers of goods and services are adopting this new approach, consumers everywhere can be more conscious of what they need, what they buy, and how they value the things that meet our needs and fill our lives. Increasing product life by repairing, sharing and reselling reduces the need for new goods and helps re-shape unsustainable supply chains. By just repairing your tech products, you can help reduce the yearly 50 million metric tonnes of e-waste. If you can, invest in goods with longer warranties, designed for durability and find companies that offer product buyback and repair schemes in addition to swapping and sharing things you need.

1. BEYOND BUYING: STATS



“...the average number of times a garment is worn before it ceases to be used has decreased by 36% compared to 15 years ago...the same pattern is emerging in China, where clothing utilisation has decreased by 70% over the last 15 years...Globally, customers miss out on USD 460 billion of value each year by throwing away clothes that they could continue to wear and some garments are estimated to be discarded after just seven to ten wears.”

(Ellen MacArthur Foundation, 2017)

“extending the average life of clothes by just three months of active use per item would lead to a 5-10% reduction in each of the carbon, water and waste footprints”

“Extending the life of clothing by an extra nine months of active use would reduce carbon, waste and water footprints by around 20-30% each and cut resource costs by 20% (£5 billion). This is a key opportunity to make a difference, and encompasses changes in design (e.g. to increase durability), getting existing clothes out of the wardrobe more often, repair and greater re-use of clothing by UK consumers.”

(WRAP, 2012)

“High-value reuse within a circular economy restores products and components that have reached their end-of-use back to their original state in a way that consumes the least amount of resources to deliver the same or improved function. In this way, the value of products are preserved at the highest level, reducing the level of risk associated with price volatility, resource scarcity, energy demand, and environmental impact. In addition, high-value reuse also creates more skilled jobs, particularly near manufacturing areas which have higher levels of unemployment.”

(Circle Economy & MVO Nederland, 2015)

“High-end washing machines would be accessible for most households if they were leased instead of sold — customers would save roughly a third per wash cycle, and the manufacturer would earn roughly a third more in profits. Over a 20-year period, replacing the purchase of five 2,000-cycle machines with leases to one 10,000-cycle machine would also yield almost 180 kg of steel savings and more than 2.5 tonnes of CO₂e savings.”

(Ellen MacArthur Foundation, 2013)

“We produce 50 million tons of e-waste each year...which is equivalent to 125,000 jumbo jets, more than 82 times the number of these planes ever built.”

(UN Environment, 2017)

“The material saving potential arising from the transition to a Circular Economy model and to a more resource efficient path is estimated to 500 billion € per year for the European industry. The job creation potential of remanufacturing and recycling in Europe is estimated at one million.”

(Di Maio, 2015)

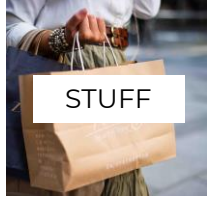
“Companies benefit from a longer lifetime for products in the same way households can enjoy more of a product's utility, from a longer, better or more efficient use of capital stock, for instance. These benefits translate directly to an increase in value-added and therefore competitiveness.”

(Montalvo, 2016)

“The cost of remanufacturing mobile phones could be reduced by 50% per device—if the industry made phones easier to take apart, improved the reverse cycle, and offered incentives to return phones.”

(Ellen MacArthur Foundation, 2013)

1. BEYOND BUYING: STATS



"When my battered 1969 Toyota car approached the age of 30, I decided that her body deserved to be remanufactured. After 2 months and 100 hours of work, she returned home in her original beauty. 'I am so glad you finally bought a new car,' my neighbour remarked. Quality is still associated with newness not with caring; long-term use as undesirable, not resourceful."

(Stahel, 2016)

"A study of seven European nations found that a shift to a circular economy would reduce each nation's greenhouse-gas emissions by up to 70% and grow its workforce by about 4% — the ultimate low-carbon economy."

(Wijkman, 2015)

"A 'circular economy' would turn goods that are at the end of their service life into resources for others, closing loops in industrial ecosystems and minimizing waste...It would change economic logic because it replaces production with sufficiency: reuse what you can, recycle what cannot be reused, repair what is broken, remanufacture what cannot be repaired."

(Stahel, 2016)

"Cycles, such as of water and nutrients, abound in nature — discards become resources for others. Yet humans continue to 'make, use, dispose'."

(Stahel, 2016)

"The poorest half of the global population are responsible for only around 10% of global emissions, yet live overwhelmingly in the countries most vulnerable to climate change — while the richest 10% of people in the world are responsible for around 50% of global emissions"

(Gore, 2015)

"The average car in North American and Western Europe is in use 8% of the time (D. Sacks, 2011). The average electric drill is used 6 to 13 min over its lifetime (Earth Share, no date). Sharing makes a great deal of practical and economic sense for the consumer, the environment, and the community. It may also make a great deal of sense for businesses that are sufficiently flexible, innovative, and forward thinking. Botsman and Rogers (2010) suggest that collaborative consumption could be as important as the Industrial Revolution in terms of how we think about ownership."

(Belk, 2014)

"...emerging economies have seen especially large rises in clothing sales, as more people in them have joined the middle class. In five large developing countries—Brazil, China, India, Mexico, and Russia—apparel sales grew eight times faster than in Canada, Germany, the United Kingdom, and the United States"

(Remy, 2016)

"Circular-economy business models fall in two groups: those that foster reuse and extend service life through repair, remanufacture, upgrades and retrofits; and those that turn old goods into as-new resources by recycling the materials. People — of all ages and skills — are central to the model."

(Webster, 2016)

"A new relationship with our goods and materials would save resources and energy and create local jobs."

(Stahel, 2016)

"A circular economy is like a lake. The reprocessing of goods and materials generates jobs and saves energy while reducing resource consumption and waste."

(Stahel, 2016)

1. BEYOND BUYING: STATS



"Most computer hardware is expected to work for seven years, but the average lifetime of a desktop computer is three years. Some electronics, like cellular phones, may be replaced as often as every year! The rapid turnaround of these products produces a significant waste stream, and the production of new equipment requires raw materials and energy for their manufacturing and transportation."

(USEPA, 2012)

A United Nations University report estimates "the value of the recoverable materials in discarded electronics was \$52 billion dollars in 2014 alone."

(UNU, 2014)

If you cannot fix, maintain or repair your electronics, donate or recycle them.

(USEPA, 2018)

"During her recent trip to Lima, Peru, photographer Verena Radulovic spoke to skilled repair technicians and shop owners in the city's thriving electronics repair and reuse market. Daniel, owner of a 3 x 12 foot used TV shop caters to the needs of his customers. "Many people come in from the rural areas, and even as far away as the jungle, to buy older model TVs with CRTs because they hold up better with fluctuating electrical current -- especially when thunderstorms impact the grid." In his shop, twenty inch TVs sell for \$40 USD (compared to \$400 for new TVs being sold at two large electronic specialty stores nearby). Radulovic observed two sales being made during the twenty minutes she was in the shop...They don't make spare parts!" lamented Victor, owner of a repair shop in Lima. He and other repair shop owners harvest spare parts from devices that can no longer be repaired. By creating their own spare parts supply, they are able to repair older model devices still in use by their customers."

(Osterberg and Radulovic, 2017)

In 2014 the number of gadgets outnumbered the human population..according to GSMA's real time tracker, there are 8.6bn mobile phones while the US Census Bureau's tracker says the global population is at 7.5bn...with our tendency to just throw away products and continually purchase new ones, this creates a global e-waste problem.

*(GSMA Intelligence, 2014, 2019
and US Census Bureau, 2019)*

"MEPs voted 662 to 32 to promote longer product lifespans "by tackling programmed obsolescence for tangible goods and for software." Parliament's recommendations, among others, included establishing a minimum resistance criteria for every product category from the design stage to encourage robust, easily repairable, good quality products; extending product guarantees to match potential repair times; disallowing a product's essential components to be affixed to the product; and providing spare parts for the lifetime of the product at a reasonable price."

(European Parliament, 2017)

1. BEYOND BUYING: STATS



"Every year New York City landfills 200 million pounds of clothing (equivalent to over 440 Statues of Liberty)."

(Ellen MacArthur Foundation, 2019)

The Ellen MacArthur Foundation, the NYC Department of Sanitation, the NYC Economic Development Corporation, and several fashion companies including ASOS, Athleta, Banana Republic, Gap, H&M, Reformation, Zara, Vogue, Hallotex, I:CO, Lenzing, ThredUP have partnered on a citywide social media advertising campaign to help divert some of that waste away from landfills...they are calling for New Yorkers to drop off their old clothing at one of 1,000 drop-off points throughout the city and the campaign is encouraging people to swap, sell, or repair their clothes... Most of these drop-off points already existed, although about two dozen were launched to coincide with this campaign...

(City of New York, 2019)

"Only 14.2% of clothes and shoes were recycled in 2015."
(USEPA, 2016)

"As customers, we know where we buy our clothes and we know where we have worn them, but #WearNext is about the next stage of that journey – where do our clothes go when we have finished with them? We believe clothes should never be trash. By bringing together these brands, along with the City of New York and recyclers, we have an opportunity to ensure New Yorkers can find a new life for their clothing. It is an important step, but we also need to recognise that customers alone cannot fix the fashion industry's waste and pollution problems. We need the industry to work together to create a system where clothes are made from safe and renewable materials, new business models increase their use, and used clothes are turned into new ones."

(Souchet, 2019)

"New York City, one of the fashion capitals of the world, generates a lot of fashion waste. New Yorkers throw 200 million pounds of clothing into the trash every year. That's the equivalent of 440 Statues of Liberty. Those clothes end up in landfills, where they will sit for at least 200 years."

(Ellen MacArthur Foundation, 2019)

"Globally, 73% of the materials used to produce clothing are landfilled or burned at the end of their life, while less than 1% of old clothing goes on to be used to make new clothing."

(Ellen MacArthur Foundation, 2019)

"Visit nyc.gov/textiles to find your nearest drop off point in NYC, and share your story on social media using the hashtag #WearNext. Find out more about Make Fashion Circular."

(Ellen MacArthur Foundation, 2019)

"The amount of stuff we use in order to live has exploded in many parts of the world, highlighted by the fact that the global extraction of materials has tripled over the past four decades, rising to an enormous 70 billion tonnes in 2010."

(UNEP, 2016)

1. BEYOND BUYING: STATS



"in the U.S., fine particulate matter air pollution is disproportionately caused by consumption of goods and services mainly by the non-Hispanic white majority, but disproportionately inhaled by black and Hispanic minorities."

(Tessum et al., 2019)

"If you buy an iPhone, that money will go to the retailer, who then buys from the manufacturer, who pays for shipping and purchases raw materials and electricity. That activity correlates with emissions from the industry."

(Tessum et al., 2019)

"Some may find it intuitive that, on average, black and Hispanic minorities bear a disproportionate burden from the air pollution caused mainly by non-Hispanic whites, but this effect has not previously been directly established, let alone quantified."

(Tessum et al., 2019)

"White people in America, on average, breathe in around 17% less pollution than they create. Conversely, black and Hispanic Americans shoulder a pollution burden of 56% and 63% more exposure, respectively, than they contribute to."

(Tessum et al., 2019)

"Overwhelmingly, economic activity originates with white Americans, and pollution concentrates around communities of color. In the U.S., white people are **much more likely to possess wealth**. That affects both spending patterns and where people live: Poorer neighborhoods are often sited closer to factories or highways, both of which contribute significantly to pollution levels. The stakes for understanding this are high: Poor air quality contributes to 63% of all deaths caused by environmental factors.. A third factor is what people spent their money on....What had the greatest bearing on emissions was the volume of demand for various products, which drove up pollution levels across the supply chain. How much you buy is just as—if not more—important than what you buy."

(Tessum et al., 2019)

"Racial-ethnic disparities in pollution exposure and in consumption of goods and services in the United States are well documented."

(Tessum et al., 2019)

"The reasons for this disparity come down to two main factors, how much people consume, and how polluted the air around them is... The first thing we needed to see was how much money people are spending, by race and ethnicity.. That information is available through the Bureau of Labor Statistics, which surveys people about their spending habits, and the Bureau of Economic Analysis, which tracks money going into and out of businesses....that allowed us to see how money flows through the economy."

(Tessum et al., 2019)

It is estimated that between 2009 and 2030 the global middle class demand could grow from US\$21 trillion to US\$56 trillion. They will be increasingly ready to spend as they aspire (and set aspirations for others) to a higher quality of life. Hence, as well as addressing lifestyles of industrialized societies, targeting the middle class of emerging economies will play a significant role in ensuring the sustainability of the planet."

(Ernst & Young, 2011)

1. BEYOND BUYING: STATS



"When devices and components can no longer be reused, the valuable materials contained in end-of-life electronics can be recovered. This preserves limited supplies of natural resources and reduces the environmental impact of mining raw materials."

(Grimes et al., 2013)

"All types of economic agents (households, small and medium-sized enterprises [SMEs], social enterprises, etc.) could potentially benefit from a longer lifetime for products. The more dependant the agent is on the product for its income, the more likely it is to benefit from an extension of product lifetime"

(European Parliament, 2016)

"Money saved by households and companies from lower (transaction) costs for repair will, for the most part at least, be spent on something else. These changes in consumption patterns would not represent market distortion from government intervention; quite the opposite. They would give consumers the freedom to spend money on other products (goods or services) they truly want, and therefore increase the individual utility for consumers."

(European Parliament, 2016)

A report from Circle Economy and MVO Nederland (2015) enforced that reuse and repair have a very strong benefit to an individual's footprint: "High-value reuse within a circular economy restores products and components that have reached their end-of-use back to their original state in a way that consumes the least amount of resources to deliver the same or improved function. In this way, the value of products are preserved at the highest level, reducing the level of risk associated with price volatility, resource scarcity, energy demand, and environmental impact. In addition, high-value reuse also creates more skilled jobs, particularly near manufacturing areas which have higher levels of unemployment."

(Circle Economy & MVO Nederland, 2015)

"77% of EU consumers would prefer to repair goods, rather than buy new ones."

(European Parliament, 2017)

"Enabling longer lifetimes for products can be seen as a social norm that was widespread before the turn of the 20th century. Mass production in the 1920s and 1930s brought not only an abundance of new products but also a faster pace of innovation and business cycles and a reduction of product lifetime. The idea of a longer life for products is still very present in the social fabric of industry and services, but is currently applicable mainly to durable and high-end consumer products."

(European Parliament, 2016)

European Parliament voted frontrunner winners who voluntarily challenge existing economic, technical, legal or cultural norms, thus setting new norms regarding product durability; offering products that use the concept of a longer product lifetime as an important component of their business innovation model by engaging in product design for service (i.e., maintenance), reuse, repair or remanufacturing: Study on "A longer lifetime for products: benefits for consumers and companies."

(European Parliament, 2016)

"All the countries in the world combined generated a staggering 44.7 million metric tonnes (Mt), or an equivalent of 6.1 kilogram per inhabitant (kg/inh), of e-waste annually in 2016, compared to the 5.8 kg/inh generated in 2014. This is close to 4,500 Eiffel Towers each year. The amount of e-waste is expected to increase to 52.2 million metric tonnes, or 6.8 kg/inh, by 2021."

(Balde et al., 2017)

"Recycling one million laptop computers can save enough energy to run 3,657 U.S. homes for a year."

(US EPA, 2018)

2. FASHION SLOW DOWN: OVERVIEW



HIGH LEVEL ACTION

Buy fewer and better clothes, stay away from fast fashion that mass produces at the cost of environmental and human justice.

EVERYDAY ACTIONS

1. Use your consumer power to buy better clothes and to increase the availability of more sustainable fashion options
2. Celebrate being unique - buy vintage, redesign old clothes, create a core basic or 'capsule' wardrobe, AND be bold in your fashion choices
3. Think long-term: buy quality clothes that last and take care of them. Today's new pieces are tomorrow's vintage treasures
4. Give your clothes a second chance: share, reuse, repair, recycle, sell, and donate high-quality fashion for second-hand use
5. Ask brands about how best to take care of their clothes, how they produce and source, and how they are committed to sustainability
6. Let brands know when you are not happy with their practices and help encourage them to move towards sustainable production

WHY THIS HELPS

Fashion is a hyper-fast industry and impacts nearly everyone in some way - we all wear clothes for functionality and to express an identity. The fast fashion phenomenon exacerbates labour conditions and product quality pushed by brands to make inventory on a weekly basis. You can help break the vicious cycle by thinking long term about your needs and identity and how best to meet them. By being a conscious and responsible consumer through your decision making, you can help the environment and society in significant ways.

2. FASHION SLOW DOWN: STATS



"Reuse of clothing saves 29 kg CO₂e per kg of clothing compared to recycling and 33 kg CO₂e compared to disposal."

(House of Commons, 2007)

"Tighter legislation has led to greater pressure on companies to consider the social and environmental impacts of their operations."

(Perry and Woods, 2018)

"several luxury brands have been implicated in recent high-profile campaigns, such as Greenpeace's (2016) Detox Catwalk, Change Your Shoes' (2016) Step Up and Fashion Revolution's (2017) Transparency Index."

(Perry and Woods, 2018)

"Global clothing production has doubled in the past 15 years."

(Ellen MacArthur Foundation, 2017)

China's environmental law was significantly updated and effected in January 2015, with a specific focus on the fast fashion sector and a clear message to manufacturers to "go circular or shutdown".

(China Water Risk, 2016)

"over 80% of the population in African nations clothe themselves in second-hand clothing."

(Bureau of International Recycling, 2015)

"Only 15.3% of all textiles was recycled in 2015."

(US EPA, 2015)

"An estimate of 84% of all textile waste is sent directly to landfills."

(US EPA, 2014)

In 2017 harsh conditions imposed upon suppliers in a number of luxury Italian brands' footwear supply chains were exposed and the negative implications this had for working conditions.

(Gesualdi and Lucchetti, 2017)

Recycling has become a rallying cry in the fashion industry... "There are no rules in fashion but one: Recycle your clothes" said H&M in an ad that went viral among millions in 2016 (10 million+ views on youtube). In partnership with the Ellen MacArthur Foundation, the company hosted a \$1million Euro contest to seek ideas for turning into new, invested in Worn Again, a company that is developing textile recycling technology, and enlisted hip-hop artist M.I.A. to produce a music video called Rewear It that aims to "highlight the importance of garment collecting and recycling."

(H&M Conscious Foundation, 2016)

With increasing globalisation and vertical disintegration of the supply chain in response to chronic downward price pressure, the high profile fashion industry became a focal point for the debate on sweatshops, child labour and worker exploitation.

In 2013, several Western fashion retailers were implicated in the "tragedy of the Rana Plaza garment factory building collapse in Dhaka, Bangladesh, which killed over 1,100 people."

(Lund-Thomsen and Lindgreen, 2014)

In 2013, India's ground-breaking reformation of company law "mandates businesses of a certain size to spend 2% of pre-tax profits on CSR activities."

(Jain and Gopalan, 2017)

2. FASHION SLOW DOWN: STATS



"Imports of Second Hand Clothing (SHC) to East Africa Countries (EACs), a fairly small region, increased from \$100million in 2001 to over \$300million in 2014 -a quarter of what the entire African continent imports..." The Wetengere study found that too much reliance on cheap imported SHCs has had adverse impacts on the local garments industry, leading to its considerable shrinkage from what used to be a thriving local industry. "Uganda for example, which is a cotton producer, has around 30 garment and footwear producers. Kenya's apparel industry employs around 30,000 people, and Rwanda has made plans to set up a garment factory with the support of foreign investors. In Tanzania, 22 cloth industries out of 24 collapsed in the 1990s."

(Wetengere 2017)

"Principally, the issue of SHC has risen because the world consumption of clothing has increased due to the fast changing fashions and the existence of cheaper clothes with reduced quality. So, consumers in the West have found themselves with more clothing than they need, with a purchase going out of style in a matter of weeks. Since people in the West can afford to buy new clothes, they get rid of outgrown, unfashionable or worn out garments and discard them as waste, or dispose of them for recycling or donate them to charities. Consequently, this has often led to more supply than the existing demand in the West, hence created the need to transfer the clothes and shoes, as donations, to the developing countries."

(Katende-Magezi, 2017)

"48,831 people in Los Angeles work in the industry, sewing and piecing clothing that ends up in low and high end stores."

(US Department of Labor, 2014)

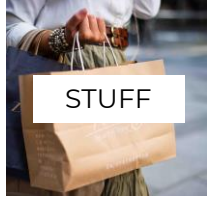
"Part of the problem fuelling the poor conditions in garments factories is what is called "the fast fashion industry." This is a recent phenomenon where stores like Forever 21 or The Gap or any major retail wants to have on their shop floors two to three, sometimes a week, fashion swapped out so that there's always trendy new fashion, new colors, new styles always on the floor at low prices. Certainly that consumer demand for this closest full of clothes that you often don't even wear at all, if only once, at low prices is what's driving the production of this industry. People will say "well they are being produced in Bangladesh," yes they are being produced in Bangladesh but to actually get that kind of turnaround to the shops, whether it's from Los Angeles or in Chicago, much of that has to be done locally."

(Shadduck-Hernandez, 2016)

"Many of those workers are laboring under dangerous conditions...72% of the survey respondents stated that their workplaces were brimming with dust; 60% reported that excessive heat and dust accumulation was due to poor ventilation that rendered it difficult to work, and even to breathe; 42% reported that exits and doors in their shops were regularly blocked; 47% observed that workplace bathrooms were soiled and unmaintained; 42% of the garment workers surveyed had seen rats and mice in the factories where they sew"

(Shadduck-Hernandez, 2016)

3. DITCH DISPOSABLES: OVERVIEW



HIGH LEVEL ACTION

Refuse everyday products which cannot be reused

EVERYDAY ACTIONS

1. Swap daily disposables such as straws, bags, coffee cups, take out food containers, forks, razors, sanitary products for reusable alternatives, you will save money in the long run
2. Continue or start to buy at bulk food stores and bring your own containers and bags to take products home in
3. Carry your own vessel for water and hot drinks
4. Rethink food storage to eliminate plastic baggies and wrap, you can swap to reusable containers and beeswax wraps
5. Clean greener- from toothpaste to household cleaning products there are alternative and often cheaper ways of getting things clean such as bicarb soda and vinegar
6. Replace disposable hygiene products with reusable ones, such as swapping pads & tampons for the menstrual cups and moon pads
7. Consider ways to refill products like cleaning and household liquids in bulk to reduce packaging
8. Use your consumer power where you shop, eat, and work to voice the change you want to see and reduce disposability from our lives!

WHY THIS HELPS

All over the world, our daily lives are overwhelmed with single-use products and plastics - from packaging to beverage cups and bags. Things that can be reused go to dumps. By ditching disposables in any way you can, you support the global movement towards #zerowaste and send signals to policy-makers to make single-use products a thing of the past. From personal beverage containers to shopping in bulk and even making your own cleaning products, there are hundreds of micro actions that help us move to a post disposable future.

3. DITCH DISPOSABLES: STATS



"Only nine per cent of the nine billion tonnes of plastic the world has ever produced has been recycled. Most ends up in landfills, dumps or in the environment. If current consumption patterns and waste management practices continue, then by 2050 there will be around 12 billion tonnes of plastic litter in landfills and the environment. By this time, if the growth in plastic production continues at its current rate, then the plastics industry may account for 20 percent of the world's total oil consumption."

(UNEP, 2018)

"Global annual plastic consumption has now reached over 320 million tonnes with more plastic produced in the last decade than ever before."

(Lebreton, 2018)

"The most common single-use plastics found in the environment are, in order of magnitude, cigarette butts, plastic drinking bottles, plastic bottle caps, food wrappers, plastic grocery bags, plastic lids, straws and stirrers, other types of plastic bags, and foam takeaway containers. These are the waste products of a throwaway culture that treats plastic as a disposable material rather than a valuable resource to be harnessed."

(UNEP, 2018)

"sea salts are contaminated with microplastics."

(Karami et al., 2017)

"microplastics were found in 90 percent of the table salt brands sampled worldwide...of 39 salt brands tested, 36 had microplastics in them."

"...the findings suggest that human ingestion of microplastics via marine products is strongly related to emissions in a given region."

"...the average adult consumes approximately 2,000 microplastics per year through salt."

(Kim, 2018)

"One-third of plastic waste globally is not collected or managed."

(Ellen MacArthur Foundation, 2016)

"Based on the average recovered concentrations, it was estimated that the average European shellfish consumer may ingest up to 11 000 microplastics per year."

(Van Cauwenberghe, 2014)

For more than 25 years, many developed countries, including the U.S., have been sending massive amounts of plastic waste to China instead of recycling it on their own.

(United Nations Comtrade Database, 2018)

Some 106 million metric tons — about 45 percent — of the world's plastics set for recycling have been exported to China since reporting to the United Nations Comtrade Database began in 1992.

(United Nations Comtrade Database, 2018)

In 2017, China passed the National Sword policy banning plastic waste from being imported — for the protection of the environment and people's health — beginning in January 2018 *(WTO Committee on Import Licensing, 2017)*

Now that China won't take it, what's happening to the leftover waste? "It's piling up...We have heard reports of waste accumulating in these places that depend on China...some of it is ending up in landfills, being incinerated or sent to other countries that lack the infrastructure to properly manage it."

(Brooks et al., 2018)

"By 2030, an estimated 111 million metric tons of plastic waste will be displaced because of China's new law, the study estimates. This is equal to nearly half of all plastic waste that has been imported globally since 1988."

(Brooks et al., 2018)

3. DITCH DISPOSABLES: STATS



"An area the size of Mexico is farmed each year for food that is thrown away worldwide and about 900 million trees are cut down for U.S. paper and pulp mills every year. This system of extracting resources, producing goods, disposing of waste, and transporting materials accounts for 42 percent of all U.S. greenhouse gas emissions."

(Bradford et al., 2018)

"More than 8 million tonnes of plastic leaks into the ocean each year – equal to dumping a garbage truck of plastic every minute."

(United Nations, 2017)

"The UK throws away 2.5 billion disposable coffee cups every year. Less than 1 percent of coffee cups are recycled. Half a million cups are littered every day. Packaging producers only pay for 10 per cent of the cost of packaging disposal and recycling."

(House of Commons, 2018)

"plastics' largest market is packaging, an application whose growth was accelerated by a global shift from reusable to single-use containers. As a result, the share of plastics in municipal solid waste (by mass) increased from less than 1% in 1960 to more than 10% by 2005 in middle- and high-income countries"

"91 percent of plastic in the world doesn't get recycled, and around 79 percent makes its way to landfills or other parts of the environment."

(Geyer et al, 2017)

"The most common single-use plastics found in the environment are, in order of magnitude, cigarette butts, plastic drinking bottles, plastic bottle caps, food wrappers, plastic grocery bags, plastic lids, straws and stirrers, other types of plastic bags, and foam take-away containers. These are the waste products of a throwaway culture that treats plastic as a disposable material rather than a valuable resource to be harnessed"

(UNEP 2018)

"An estimated 20 billion pads and tampons as well as their accompanying applicators and packaging, and an estimated 20 billion disposable diapers are added to landfills throughout the country each year, creating about 3.5 million tons of waste. are sent to landfills each year just in North America."

(US EPA, 1991)

"Microplastics have been reported in seafood, and in processed food and beverages such as sugar, beer, and salt."

(Wright & Kelly, 2017)

"Hong Kong is the biggest exporter of plastic waste, at 56.1 million tons. But it has acted as an entry point to China – having imported 64.5 million tons from 1988 to 2016 from places like the U.S. (which sent more than 372,000 metric tons there in 2017) and then having sent most of that on to China."

(Institute of Scrap Recycling Industries, 2017)

Countries like Malaysia, Thailand and Vietnam, which have picked up some of what China is leaving behind, don't have as well-developed waste management systems as China. "Vietnam has already reached a cap on how much waste it can handle; the country announced that it will pause and eventually phase out imports of plastic scraps."

(Brooks et al., 2018)

"Not one country alone has the capacity to take what China was taking...what we need to do is take responsibility in making sure that waste is managed in a way that is responsible, wherever that waste goes – responsible meaning both environmentally and socially."

(Brooks et al., 2018)

3. DITCH DISPOSABLES: STATS



"On this historic occasion we make a solemn pledge that by 2022 we shall eliminate all single-use plastics from our beautiful country." This is the most ambitious by far and represents only the second time a country in its entirety has made such a pledge following Costa Rica (which vowed in 2017 to ban all single-use plastics by 2021).

(Vardhan, 2018)

"Some of the **most plastic-polluted rivers in the world** – including the Indus and the Ganges – run through India, and the country itself produces around 25,000 tonnes of plastic waste every year."

(Vardhan, 2018)

"The choices that we make today will define our collective future. The choices may not be easy. But through awareness, technology, and a genuine global partnership, I am sure we can make the right choices. Let us all join together to beat plastic pollution and make this planet a better place to live."

(Modi, 2018)

"Environmental degradation hurts the poor and vulnerable the most...It is the duty of each one of us to ensure that material prosperity does not compromise our environment."

(Modi, 2018)

"India has made a phenomenal commitment and displayed clear, decisive and global environmental leadership. This will inspire the world and ignite real change."

(Solheim, 2018)

"I want to share with you the joy that as of today we're enacting the law...large businesses have six months to phase out the use of plastic bags and smaller ones will be given two years to adapt to the new rules."

Any form of plastic bag other than those constituting primary packaging necessary for hygiene or to prevent food wastage are prohibited...those flouting the ban will be subject to a \$370 fine (in a country where the minimum wage is just \$800).

"Without a doubt we're taking a giant step towards a cleaner Chile."

(Sebastian Pinera, 2018)

"Seattle became the first US city to ban single-use plastic straws and utensils in food service."

(Seattle Public Utilities, 2018)

"In many developing countries, plastic bags are causing floods by blocking drains, or they're being eaten by cattle...this can lead to a rise in the black market of the bags, or the use of thicker plastic bags that are not covered by the bans, which can end up causing even more damage to the environment."

(Giacovelli, 2018)

"National actions among some developing countries to curb disposable plastic use include: Botswana – retailers charged but no enforcement and controls "failed". Eritrea – ban on plastic bags and dramatic decrease in drain blockage. Gambia – ban on plastic bags, but "reappearance after political impasse." Morocco – bags banned – 421 tonnes of them seized in one year, virtually replaced by fabric. Bangladesh – ban on bags but lack of enforcement. Vietnam – bags are taxed but still widely used. Government considering increasing tax five times. Ireland – tax led to 90% fall in consumption. Kenya – cows ingested an average of 2.5 bags in their lifetimes. Now there's a total ban, and fines and a four-year jail term for making, importing or using them."

(Giacovelli, 2018)



MOVE ACTIONS

CONNECTING ACTIONS TO IMPACTS
DATA MAPPING AND DEMONSTRATING THE IMPACT POTENTIAL

1. KEEP ACTIVE: OVERVIEW



HIGH LEVEL ACTION

Keep or take up walking and cycling to work and advocate for your government and local businesses to provide more sustainable and safer public transport options

EVERYDAY ACTIONS

1. Pre-check and choose routes for walking and cycling, give yourself extra time, get exercise, increase your productivity and health and wellness, and reduce your transport impact
2. Engage with green spaces and support urban conservation projects in your community by using public nature spaces for moving around, like bike paths
3. Give your productivity and personal wellness a boost by walking or cycling instead of taking short personal car rides
4. Start a group of people commuting to work at the same time to make a walking or bike 'bus' if safety is of concern
5. Swap short drives for walks or bike rides (or learn to rollerblade, skateboard, or scooter if you want a cooler way to get around)
6. Support local government initiatives to introduce better urban design, walkable cities, and mass public transport systems

WHY THIS HELPS

Using your body to get around is great for many reasons, it's cheap, clean, good for your health, and its implementation often increases road safety. In many places around the world, walking and cycling are the norm, but more can be done to enhance infrastructure and make it safer. By cycling to work, you can reduce your chance of cancer by 45% and cardiovascular disease by 46%. Introducing sidewalks in a city can reduce serious traffic injuries by 25%. Cars contribute huge impacts to air pollution and to your carbon footprint, so when you can, swap car rides to human-powered transport options to help reduce these stats and encourage a shift in the way we design cities and move around them.

1. KEEP ACTIVE: STATS



“Increasing median daily walking and bicycling from 4 to 22 minutes reduced the burden of cardiovascular disease and diabetes by 14%, increased the traffic injury burden by 39%, and decreased greenhouse gas emissions by 14%. Low-carbon driving reduced greenhouse gas emissions by 33.5% and cardiorespiratory disease burden by less than 1%.”

(Maizlish, 2013)

“the risk for cardiovascular diseases is reduced by 16% for people who walk 3 h per week and by 11% for people who actively commute to work (compared to people who do not actively commute).”

(Winters, 2017)

“There is significant potential for “active travel to substitute short car trips, with sizeable impacts on carbon emissions from personal travel.” This study found that, “half of all car trips were less than 3 miles long. Taking into account individual travel patterns and constraints, walking or cycling could realistically substitute for 41% of short car trips, saving nearly 5% of CO₂e emissions from car travel. This was on top of 5% of ‘avoided’ emissions from cars due to existing walking and cycling. The evolving high quality walking and cycling infrastructure in the case study area was unlikely to promote a significant reduction in carbon emissions from (displaced) car journeys on its own.”

(Neves, 2018)

“The use of bikeways were found to produce modest reductions in CO₂ emissions by diverting some trips from more carbon-intensive modes. Public transport investments and railway improvements, while generating new CO₂ in their development, do more than offset embodied emissions when they divert passenger and freight movements from higher carbon modes and improve the efficiency of traffic flows.”

(ADB, 2010)

“...if levels of cycling in the EU-27 were equivalent to those found in Denmark, bicycle use would help achieve 12 to 26% of the 2050 target reduction set for the transport sector, depending on which transport mode the bicycle replaces.”

The European Cycling Federation (ECF) is urging politicians to focus less on technologically complex solutions to emissions, such as electric cars, and instead think about the potential for increased cycling, especially given that around a third of motorised journeys within the EU are 1.25 miles or less.

(Blondel, 2011)

“We found significant potential of active travel to substitute short car trips, with sizeable impacts on **carbon emissions** from personal travel. Half of all car trips were less than 3 miles long. Taking into account individual travel patterns and constraints, walking or cycling could realistically substitute for 41% of short car trips, saving nearly 5% of CO₂e emissions from car travel. This was on top of 5% of ‘avoided’ emissions from cars due to existing walking and cycling.”

(Neves, 2018)

“There is a growing recognition of the role that walking and cycling can make in reducing **greenhouse gas** (GHG) emissions by substituting motorized travel, particularly on short trips.”

(Neves, 2018)

“cyclists tend to be happier than people who use other means of transport.”

(Morris and Guerra, 2014)

1. KEEP ACTIVE: STATS



"The Korean city of Suwon embarked on a radical experiment in 2014: For one month the neighborhood became a car-free zone, which allowed the residents to envisage a low-carbon alternative. After the trial, people did not want to return to the way things had been, but chose to adapt their behaviors and keep elements of the trial."

(Mitchell et al., 2016)

"In Freiburg, Germany, they spent 40 years making incremental changes to the transport system to take it toward its long-term vision of a city that promotes walking, cycling, and public transport. This is a prime example of how a series of interventions can build a sustainable transport system, if there is the foresight by government and a holistic approach to transport is adopted."

(Mitchell et al., 2016)

"Proponents of active transportation (walking, biking, skateboarding, etc.) argue that a shift from motorized to nonmotorized mode of travel can have positive impacts on health and the environment. People who walk and bike have been found to derive relatively greater pleasure out of travel."

(Morris and Guerra, 2014)

"Active travel is the most viable option for significantly increasing physical activity levels across the population and the choice to walk or cycle is strongly influenced by urban settings and transport policy. Policies to encourage walking should be placed at the heart of future urban mobility strategies and indeed all our decisions about the built environment: Walkable cities are better cities for everyone. The built environment needs to encourage healthier choices so we need to design physical activity back in to our everyday lives by incentivising and facilitating walking and cycling as regular daily transport. Wayfinding systems like Legible London, which saw the implementation of on-street signage tailored specifically for pedestrians, are one example of a step in the right direction."

(Mitchell et al., 2016)

"Getting more people walking and cycling to work would make for a healthier workforce and research also shows that absenteeism rates are lower among staff who cycle and that active commuters are better able to concentrate and under less strain than those who travel by car."

(Mitchell et al., 2016)

"there were over 1 000 cities worldwide with bicycle-sharing programmes in operation in 2017. These programmes involved a combined fleet of over 4.5 million shared bicycles, up from that of less than 250 000 shared bicycles a decade ago."

(International Transport Forum, 2018)

"Improving the 10% highest-risk roads in each country over 20 years, through the implementation of footpaths, safety barriers, bicycle lanes and paved shoulders, has the potential to prevent around 3.6 million deaths and 40 million serious injuries."

(World Road Association, 2015)

"Chennai, India shifted 60% of its transport budget to walking and biking, despite the outcry of some motorists, and is aiming to achieve zero road deaths. The city is developing 'complete streets' for all users with wide sidewalks, proper cycle paths, and organized parking. It plans to upgrade 80% of its streets by 2018."

(Corporation of Chennai, 2014)

"The WHO estimated that more than 300 million adults were obese, putting them at increased risk for diseases such as diabetes hypertension, cardiovascular disease, gout, gallstones, fatty liver, and some cancers..explained partially by declining levels of physical activity."

(Pucher, Buehler, Bassett and Dannenberg, 2010).

1. KEEP ACTIVE: STATS



“By 2030, Americans will be 46% less physically active than in 1965. The Chinese will be 51% less active than they were in 1991, Indians 14% less active than in 2000.”
(Ng and Popkin, 2012)

“By 2030, 47% of Americans, 39% of Mexicans and 35% of English citizens are projected to be obese.”
(OECD, 2017)

“The World Health Organization estimates that physical inactivity is responsible for the following global disease burdens: 27% of diabetes, 30% of ischemic heart disease, and 21 to 25% of breast and colon cancers.”
(Reynolds, Winters, Ries, & Gouge, 2010)

“Turkey has launched the “Promoting Physical Activity Project” with 275 000 bicycles distributed to schools, universities, municipalities and NGOs.”
(OECD, 2017)

“In absolute numbers, more overweight and obese children live in low and middle income countries than in high income countries.”
(Abarca-Gómez, L. et al., 2017)

“Global numbers advise that the number of children and adolescents who are obese has increased from 11 million to 120 million in the past 40 years...An additional 213 million children between the ages of 15 to 19 were overweight in 2016, but fell under the threshold of obesity.”
(Abarca-Gómez, L. et al., 2017)

“In Finland, approximately 75% of children and youth actively commuted to school when the distance is less than 3 km. While in the United States, less than 15% of children and youth used active transportation to get to and from school
(Tremblay et al., 2014)

“Evidence shows that physical activity declines from the age of school entry, and less than 20% of the global population is sufficiently active, as defined by WHO guidelines of physical activity, by the age of 13-15 years.”
(Tremblay et al., 2014)

“The Decade of Action for Road Safety initiative has seen 92 countries reporting that they have increased their policies around walking and cycling compared to 68 countries in 2010.”
(World Health Organization, 2015)

“In the Netherlands, 25 percent of all trips made by septuagenarians are by bicycle...In Germany 50–55 percent of all trips for adults aged over 65 are either on foot or by bicycle.”
(Frye, 2013)

“Research by Statistics South Africa indicates that 11 million out of a possible 17 million students in South Africa walk to school, with ‘walking all the way’ being the primary means of travel. Of students walking to school, half a million walk for more than an hour – up to 6 km each way – thus impacting concentration and learning ability.”
(UN Environment, 2016)

“Among low-income groups in Santiago, Chile, Non Motorized Transport provides a modal share of over 50 per cent, compared to only 10 per cent among high-income groups.”
(UN-Habitat, 2013)

2. SHARE YOUR RIDE: OVERVIEW



HIGH LEVEL ACTION

Continue or opt for public and shared transport instead of driving and advocate for more options

EVERYDAY ACTIONS

1. Join bike, scooter, or car share services if your city has them
2. Use public transport and give extra time to yourself (read a book, enjoy music, meet someone new)
3. Join rideshare apps or start collaborative commuting with your neighbours or friends
4. When using on demand taxi services opt for the green option (if available) and the ride share option
5. If available, consider intercity or intercountry rail services over short distance flights

WHY THIS HELPS

It's true sharing is caring! Sharing your ride can save money and reduce your personal footprint. In many parts of the world sharing transport is a way of life. The World Health Organization estimates that 3.7 million people die each year as a result of outdoor air pollution. The transport sector currently contributes 23 percent of all carbon dioxide (CO₂) emissions. So to make a change, if you do not already, try and use available public transport systems and demand more: better, faster and cheaper alternatives that will help you to live a cleaner life.

2. SHARE YOUR RIDE: STATS



"WHO estimates that 3.7 million people die each year as a result of outdoor air pollution. The transport sector currently contributes 23 percent of all carbon dioxide (CO₂) emissions."

(World Health Organization, 2015b)

"In 2014, 92% of the world population was living in places where the WHO air quality guidelines levels were not met. About half of the world's urban population lives in cities that exceed by 2.5 times or more the recommended levels of fine particulate matter (PM_{2.5}) set out by WHO air quality guidelines."

(WHO, 2015b)

"Worldwide, it is estimated that urban outdoor air pollution in the form of fine particulate matter (such as PM_{2.5}) cause: 14% of the lung cancer burden, 24% of the Ischaemic heart disease burden, 25% of the stroke burden, 9% of the pulmonary disease burden, and 8% of the respiratory infection burden in DALYs."

(WHO, 2016b)

"Application to Bogotá, Colombia, a city with a bicycle modal share of 3.3%, showed that the CO₂ opportunity benefits are approximately 151 tons of CO₂ per day and 55,000 tons of CO₂ per year."

(Massink et al., 2011)

"In the recent international climate agreement at COP21 in Paris, a full 75% of countries' Nationally Determined Contributions (NDCs) featured sustainable transport, yet only 4% included walking or compact urban form."

(Lane, 2016)

"About 800 girls and women die in pregnancy and childbirth in developing countries every day due to a lack of access to transport and the distance to health services."

(ADB, 2013)

"Barcelona's public bike share system, Biking, was estimated to reduce annual carbon dioxide emissions by 9 062 tonnes per annum in 2011."

(Rojas-Rueda et al., 2011)

"The Unguja Island of Zanzibar had a cycling mode share of 41% in 2009. The climate value of this cycling in the wards of Stone Town was estimated to be 1062.4 tonnes of CO₂ per annum, which corresponds to between US\$ 7 076 and US\$ 20 994, if it were traded on the carbon markets."

(Mendiate, 2016)

"In Portland, Oregon, the number of miles of bikeways (lanes, paths, and boulevards)

increased 247% from 79 in 1991 to 274 in 2008. This coincided with the share of workers commuting by bicycle rising from 1.1% in 1990 to 6.0% in 2008."

(City of Portland, 2008)

"After it built a cycling network, New Plymouth saw a 35 per cent increase in cycling between 2006 and 2013, and increases in the numbers of people commuting by bike on shared pathways were reported in excess of 50 percent."

(NZTA, 2016)

"One year after a safe schools programme was instituted in a school in New Plymouth, New Zealand, a survey of all students showed a 62.5% increase in active travel to and from school."

(NZTA, 2013)

Transportation studies put "the **annual cost of congestion at \$160 billion**, which includes 7 billion hours of time lost to sitting in traffic and an extra 3 billion gallons of fuel burned."

(Schrunk, 2015)

2. SHARE YOUR RIDE: STATS



"A German study has calculated that a 10% increase in the modal share of walking and cycling in urban areas would mean that the German GDP would go up by 1.11% by 2030, representing € 29bn, based on German GDP in 2012."

(Fraunhofer, INFRAS and IFEU, 2013)

"Demand Responsive Shared Transport (DRST) services can bridge the gap between shared low-quality **public transport** and unsustainable individual private transport. **Taking advantage of Information and Communication Technologies (ICT)**, they can supply transport solutions ranging from flexible transit to ride sharing services, providing real-time "on demand" mobility through fleets of vehicles shared by different passengers."

(Inturri, 2019)

"Millennials are considered more conscious socially, culturally, and environmentally than previous generations. In addition, ride-sharing has been acknowledged as a means of sustainable consumption... they perceive the wider economic, social, and environmental impacts on a destination of adopting ride-sharing."

(Lee et al., 2019)

"The private car threatens the centrality of the urban organization. Also, it affects the relationships between people because it destroys urban sociability thus generating economic distortions."

(Nasr, 2019)

"Ridesharing is recognized as a highly effective means of transport to solve energy consumption, environmental pollution and traffic congestion issues. Indeed, ridesharing can reduce the number of vehicles on the roads to avoid traffic jams and thus it contributes to a reduction in greenhouse gas emissions. Its main thrust resides in sharing transport expenses, meeting different people and making traveling more enjoyable."

(Nasr, 2019)

"In addition to the economic and ecological benefits, ridesharing permits, through the grouping of people who know each other or not, restoring a certain communication and to creating and fortifying social bonds."

(Nasr, 2019)

"...the private car prevents the prospects of advanced and sustainable mobility go to good advantage. It is therefore behind many obstacles that run counter to the implementation of a clean and sustainable development process."

(Nasr, 2019)

"The European Union has a fairly dense transport network, including road, rail, metropolitan, maritime, etc. The use of personal vehicles is popular, indeed, 80% of urban travel is done with this means of transport.. The environmental impact and congestion of the road network have become a major concern for the authorities, who are trying to reduce or to see better use of this means of transport."

(Eurostat, 2011)

"Ridesharing has been recognized as a highly effective way of transport to solve energy consumption, environmental pollution and traffic congestion issues. Indeed, it reduces the number of vehicles on the roads in order to avoid traffic jams and thus helps decrease greenhouse gas emissions. Moreover, it allows sharing transportation expenses between several individuals. In addition to the economic and ecological benefits, ridesharing permits, through the grouping of people who know each other or not, restoring a certain communication and to creating and fortifying social bonds."

(Nasr, 2019)

An MIT Study shows that "carpooling apps could reduce congestion by a factor of three while still serving the same number of people."

(Conner-Simons, 2017)

3. GO CLEANER: OVERVIEW



HIGH LEVEL ACTION

Swap to options like electric vehicles, cleaner fuels and fewer kilometers to reduce your transport footprint

EVERYDAY ACTIONS

1. Explore all the options available to you getting around and find which ones have the least impact
2. Adjust your routes so that you are going the least distance
3. Swap short distance drives for alternative modes of transport
4. Look for and ask about flexible working options to reduce your commute, such as working from home, video conferencing or later start times
5. See if there are leasing services where you can give an electric car or bike a try
6. Swap your fossil fuel car to an electric one
7. Use cleaner fuel when you can
8. Support government or business initiatives that provide alternative fuel and cleaner transport options for your community

WHY THIS HELPS

We all have to get around and how we do impacts climate change and air pollution. You can opt to drive less, share your ride, use cleaner fuels and swap to electric. Reducing car dependence can also result in cost and time savings, better air quality, lower noise and less congestion. Globally there is a rise in electric vehicle use and charging stations, so the time is ripe to consider swapping to electric options. Try out options through leasing or car share services to see how it fits in your life.

3. GO CLEANER: STATS



"The UK provides financial benefits to buyers of zero emissions vehicles including: "100% first year allowance for business owners up to 2021, UK Plug-in Car Grant of £3,500, Exemption from London Congestion Charge, Significant Fuel Savings vs. a comparable Combustion Engine Car and no car fuel benefit for company cars, and Scottish customers can enjoy interest-free loans of up to £35,000 (personal) or up to £100,000".

(UK Office for Low Emission Vehicles, 2018)

"The transportation sector accounts for 27 percent of total U.S. greenhouse gas (GHG) emissions and is the sector with the greatest annual growth in terms of GHG emissions."

(Coward, 2003)

"Transportation accounts for 14% of global greenhouse emissions, a significant area to tackle when almost all (95%) emissions from this sector involve burning fossil fuels (including road, rail, air, and marine transportation)."

(IPCC, 2014)

"New powertrain technologies, such as Hybrid Electric Vehicles, have a price premium which can often be offset by lower running costs."

(Palmer et al., 2018)

"This study shows that forgoing vehicle purchases does not offset the increased GHG emissions caused by the shift from public transportation or private vehicle use to car sharing."

(Jung et al, 2018)

"The CEVforBC program is intended to make clean energy vehicles (CEV) more affordable for British Columbians, incentives through March 31, 2020 include: \$6,000 for the purchase or lease of a hydrogen fuel cell vehicle, \$5,000 for the purchase or lease of a new battery electric vehicle, \$2,500 – \$5,000 for the purchase or lease of a plug-in hybrid electric vehicle."

(Government of British Columbia, 2018)

"As electric cars are helping to reduce pollution from passenger vehicles, trucks and buses powered by batteries or fuel cells can do the same for the commercial sector."

"battery-electric bus on today's electricity grid is the lowest-carbon option in every part of the country and are already operating in cities across the United States."

(O'Dea, 2018)

"A 2018 Italian study showed that the transition to a low carbon mobility profile can improve the domestic economy, reduce spending on imported fuel, increase national energy security, reduce the exposure of consumers to oil price volatility, strengthen the macroeconomic resilience of the country and improve the health of citizens. Reduced oil imports, and lower costs of mobility, will create jobs and economic growth; greenhouse gas emissions from the passenger car fleet will be substantially cut; local air pollution drastically reduced and related negative externalities avoided."

(European Climate Foundation, 2018)

3. GO CLEANER: STATS



“High-speed rail offers a sustainable, progressive means of managing the economic and environmental cost of road and air travel, as well as offering fast connectivity and a positive passenger experience. For example, the planned high-speed rail network from London to Birmingham and to Manchester and Leeds, High Speed 2, could transfer 4.5 million journeys a year from the air and 9 million from the roads, removing lorries from busy routes.”

(Mitchell et al, 2016)

“In the UK, an Arup-Mitsui joint venture in Milton Keynes is currently trialling an innovative approach to charging electric buses and this heralds a quieter, cleaner future for public transport. The new buses are able to recharge their batteries wirelessly through the day, which means that for the first time, electric buses are capable of carrying the equivalent load of a diesel bus.”

(Mitchell et al., 2016)

“While car sharing makes the best of existing resources, sharing a petrol car doesn’t get anywhere near the fact that total GHG emissions could be reduced to zero if electric vehicle infrastructure was expanded more fully. But a fully resourced electric car sharing network is a win-win”.

(Jung, 2018)

“In many developing countries, non-motorized transport (NMT) takes a larger share of trips than in developed countries. However the reverse is often true for the trends: modal shares of walking and cycling decreases in developing countries, and (slowly) rises in the developed world. However it’s hard to make generalisations, as modal splits are highly country and city-specific, with NMT shares between 10% and 66% for different Western-European cities, and cycling in urban areas varying between 1% (US) and 27% (The Netherlands) of total trips.”

(VTPI, 2010)

“transportation studies put the annual cost of congestion at \$160 billion, which includes 7 billion hours of time lost to sitting in traffic and an extra 3 billion gallons of fuel burned.”

(Urban Mobility Scorecard, 2015)

“transportation accounts for about 28 percent of total greenhouse gas emissions.”

(US EPA, 2016)

“Non-motorized transport (NMT) is mostly used for short-distance trips, with cycling particularly relevant up to 7.5 kms, and walking up to 2.5 kms. As up to 70% of cars trips cover less than 5 kms, NMT has a large potential to replace car travel.. Several studies have shown that 5-10% of car trips can be replaced by NMT provided good policies are in place.”

(VTPI, 2010)

“Heavy-duty vehicles play a major role in our everyday lives and a major role in environmental damage...While they comprise only about 5 percent of all vehicles on the road, they generate more than 25 percent of global warming emissions from US vehicles as well as significant amounts of air pollution.”

(FHWA 2017; OTAQ 2017)

3. GO CLEANER: STATS



At the UNEA-4, Argentina, Chile, Costa Rica, and Peru proposed a resolution "Clean and Electric Mobility," but "several delegates expressed concerns about the resolution focusing solely on electric mobility, and called for including other sustainable or low-carbon transport and referring to policies on air travel, biofuels, and active transportation options such as cycling and walking. Delegates also discussed whether to single out SDG 3 (good health and well-being), SDG 11 (sustainable cities), and SDG 13 (climate change), as relevant SDGs to which the transport sector can potentially contribute."

(UNEA4, 2019)

The final resolution outcome of a recent UN Environment Assembly session (UNEA-4, 2019) "encouraged member states to consider creating domestic policy instruments on innovation of sustainable mobility and called on stakeholders and member states to promote the exchange of knowledge, good practices, lessons learned, and opportunities on sustainable mobility."

(UNEA-4, 2019)

"Non-motorized transport especially walking and cycling enhance equity as it can be used by both the rich and the poor. They offer affordable access to work, education and other essential services to all especially the poor. In most developing countries, majority of the population especially in urban areas do not own a car and public transport is in most cases unaffordable. In African cities for instance, walking constitutes 30-35 percent of all trips."

(UN HABITAT, 2013)

"Over 20 percent of the people in developing countries in 2010 lived on less than USD1.25 a day" (World Bank, 2011).

..."This indicates that meeting daily needs including transport is a challenge for a significant number of people in developing countries"

(UNEP, 2017)

"Through the Sustainable Development Goals, there has been a shift and the world is now focused on pursuing sustainability in all spheres of development. Investing in clean transport modes is paramount to achieving sustainable growth, improving access to destinations and services and well-being of the people"

(UNEP, 2017)

"non-motorized transport is air-pollution free as it is powered by human energy. IEA estimates that a shift of 1 percent in distance traveled by car to non-motorized transport modes can help reduce energy consumption and pollution emissions by about 2-4 percent."

(Litman, 2007)

"Target 10.3 of the Sustainable Development Goals aims to ensure equal opportunity and reduce inequalities by promoting appropriate legislation, policies and actions. The transport sector exhibits a lot of inequalities, transport planning and development in most countries is focused on making movement of those who drive easy while neglecting the mobility needs of those who walk, cycle or use wheelchairs. These inequalities have adverse effects especially on vulnerable groups such as children, the elderly and the physically challenged"

(UNEP, 2017)



MONEY ACTIONS

CONNECTING ACTIONS TO IMPACTS
DATA MAPPING AND DEMONSTRATING THE IMPACT POTENTIAL

1. ETHICAL INVESTMENT: OVERVIEW



HIGH LEVEL ACTION

Use your principles to guide investing and consider socially and environmentally responsible options

EVERYDAY ACTIONS

1. Spend time and money on things that have positive impacts
2. Decide on your priority social and environmental issues and invest accordingly
3. Ask your bank about their sustainable investment policy and if they don't have one then swap banks if you can
4. Speak up and voice your preference for sustainable investments - look at long-term drivers that affect company performance
5. Invest in goods and services produced in sustainable ways
6. Never invest in products made from endangered wildlife
7. Invest in a diversified portfolio (don't put all your eggs in one basket)
8. Put savings in responsible stocks, investments, including pensions and banks
9. Pay taxes to help build your community
10. Advance your family finance skills and financial management to avoid going into or starting to get out of debt

WHY THIS HELPS

If you're not investing responsibly, you're investing irresponsibly. Everything we buy has an impact on people and the planet, so when you are thinking about purchasing what you need and want, consider your real needs and what types of goods and services you want in the future. You have the power to choose what your money supports (and what not to support). This goes for goods and services AND investments in stocks and bonds. Investing in the future is also about the companies you invest in when you buy something. Financial planning that considers your sustainability impacts and available ethically motivated options can support your family and your community. Choosing to invest more in locally produced goods and services can have positive economic outcomes as it injects cash into the community

1. ETHICAL INVESTMENT: STATS



“Sustainable, responsible and impact investing (SRI) is an investment discipline that considers environmental, social and corporate governance (ESG) criteria to generate long-term competitive financial returns and positive societal impact.”

(Fussler et al., 2017)

“high net worth individuals are increasingly influencing SRI issues including climate change, diversity, human rights, weapons and political spending with \$3 trillion in sustainable assets.”

(US SIF Foundation, 2018)

“The top three issues for asset managers and their investor clients are climate change, fossil fuels, tobacco and conflict risk.”

(Forum for Sustainable and Responsible Investment, 2018)

“There are several motivations for SRI among individual investors including personal values and goals...Sustainable investors aim for strong financial performance, but also believe that these investments should be used to contribute to advancements in ESG practices. They may actively seek out investments—such as community development loan funds or clean tech portfolios—that are likely to provide important societal or environmental benefits. Some investors embrace SRI strategies to manage risk and fulfill fiduciary duties; they review ESG criteria to assess the quality of management and the likely resilience of their portfolio companies in dealing with future challenges. Some are seeking financial outperformance over the long term; a growing body of academic research shows a strong link between ESG and financial performance.”

(Epstein, 2018)

“The fastest growing areas of SRI are: alternative investment funds like PE & VC (assets tripled to \$588bn); registered investment companies (ETFs doubled to \$7.4bn); and Community Investments like credit unions.

(Forum for Sustainable and Responsible Investment, 2018)

“The global socially responsible investing (SRI) market is now worth almost \$23 trillion, with around half of all assets managed in Europe and more than a third in the U.S.”

(JP Morgan Chase, 2017)

“Ethical investing has grown tremendously, \$8.72trillion dollars was invested according to socially responsible investment strategies in 2016...and more than one out of every four dollars under professional management in the United States—\$12.0 trillion or more—was invested according to SRI strategies in 2017.”

(Forum for Sustainable and Responsible Investment, 2017)

“Individuals are important stakeholders of ethical investing, for example, they invest -as part of their savings or retirement plans—in mutual funds that specialize in seeking companies with good labor and environmental practices.”

(Forum for Sustainable and Responsible Investment, 2018)

“Investors in India, Singapore and China are looking to increase the proportion of sustainable investments in their portfolios to an average of 19 per cent over the next three years, with Chinese investors leading the way with an expected allocation of 23 per cent by 2021.”

(Standard Chartered, 2018)

1. ETHICAL INVESTMENT: STATS



“Generating sustainable returns over time requires a sharper focus not only on governance, but also on environmental and social factors facing companies today. These issues offer both risks and opportunities, but for too long, companies have not considered them core to their business – even when the world’s political leaders are increasingly focused on them, as demonstrated by the Paris Climate Accord. Over the long-term, environmental, social and governance (ESG) issues – ranging from climate change to diversity to board effectiveness – have real and quantifiable financial impacts.”

(Letter the world's largest investor, BlackRock CEO Larry Fink, wrote to CEOs, 2016)

“...more than half of impact investors surveyed reported tracking some or all of their impact performance against the SDGs, showcasing the potential for impact investing to catalyze progress towards the goals.”

(GIIN, 2018)

“Impact investments have outperformed the benchmark for eight out of the last 10 years... During the same period, impact investments also showed they were better protected from the downside in the market.”

(MSCI, 2018)

“...we expect companies to have strategies to manage these issues. Recent action from the U.S. Department of Labor makes clear that pension fund fiduciaries can include ESG factors in their decision making as well.”

(Letter the world's largest investor, BlackRock CEO Larry Fink, wrote to CEOs, 2016)

On April 23, 2018, the Department of Labor (DOL) issued new guidance for private sector employee benefit plans about fiduciary responsibility in the exercise of shareholder rights and in weighing environmental, social, and governance (ESG) factors in investment decision-making. At a time when public pension beneficiaries are expressing concerns about the prudence of retaining fossil fuel investments in their pension plans.

(Canary, US Department of Labor, 2018)

“There are two main types of impact investing. The first aims to provide market returns. An example would be a private equity investment in a worthy cause that aims to provide a typical return on capital. An example might be an education company where the entrepreneur is willing to set up key performance indicators, or agricultural investments that aim to raise farmers’ income from subsistence levels. The second, concessionary return impact investing, requires the investor to accept a smaller than normal return on capital. An example might be an agreement to take a return of, say, 5 percent, from a debt security in a frontier market where the company is investing in education, where one would normally expect a coupon of 10 per cent for the risk taken.”

(Credit Suisse, 2012)

Invest in environment, social, governance assets and exchange traded funds.

“...the growth of ESG assets stateside is up over 200% from the past decade and the popularity of ESG-themed Exchange-Traded Funds (ETFs) has surged since 2016, with \$11 billion in assets under management (AUM) across 120 funds around the world.”

(JP Morgan Chase, 2017)

1. ETHICAL INVESTMENT: STATS

MONEY

"Pension funds have a responsibility, known as "fiduciary duty", to make prudent, unbiased decisions on behalf of, and in the interests of, their beneficiaries. Being a prudent investor requires consideration of all long-term investment value drivers – including environmental and social risks as well as opportunities – that may affect the performance of a company."

(Solheim, 2018)

"Fiduciary duties exist to ensure that those who manage other people's money act in their beneficiaries' interests, rather than serving their own interests."

(Fiduciary Duty in the 21st Century Programme, 2016)

"The manner in which fiduciary duty is defined has profound implications."

(Fiduciary Duty in the 21st Century Programme, 2016)

"Some institutional investors believed that environmental, social and governance (ESG) issues were not relevant to portfolio value, and were therefore not consistent with their fiduciary duties. This assumption is no longer supported."

(Fiduciary Duty in the 21st Century Programme, 2016)

"Much of the world's working population counts on this basic premise as they seek to build a nest egg for later life. Rather than stash their cash under the mattress, they put their faith in investment funds making what they hope are healthy bets."

(Solheim, 2018)

"Today, there are more than 300 sustainable investment-related policy tools and market-led initiatives, more than half of which were created in the last few years. Measures adopted include pension fund disclosure requirements and regulations encouraging pension funds to adopt responsible investment practices."

(UNPRI, 2016)

"Regulatory momentum is now global, with examples of action in [Europe](#), [Brazil](#), the [UK](#) and China. In Europe, the European Commission's Action Plan on Sustainable Finance includes a legislative proposal to clarify investors' legal obligation to consider sustainability factors in investment decisions. A change of this nature – simultaneously across the entire European investment chain – would constitute a key milestone towards the transition to a sustainable financial system."

(Solheim, 2018)

"In Brazil, the Superintendence of Private Pension Funds (PREVIC), the closed pension funds regulator, has approved a revision which will clarify requirements for investors to integrate sustainability issues into their investment practices and processes."

(Solheim, 2018)

"In China, the Securities Regulator (CSRC) is setting up a mandatory environmental reporting framework which will apply to all listed companies by 2020. This will provide a strong push for ESG integration for investors, complementing the recent achievements of the national Guidelines on Establishing a Green Financial System in China."

(Solheim, 2018)

"The South African Financial Services Board (FSB) should provide practical guidance to enhance the impact of Regulation 28 on the investment practice of South African pension schemes and actively monitor progress in scheme practice."

(Fiduciary Duty in the 21st Century Programme, 2018)

2. DIVESTMENT: OVERVIEW



HIGH LEVEL ACTION

Actively swap your financial institutions or services to more sustainable options

EVERYDAY ACTIONS

1. Move your money; ask your bank how they invest your money. If it is in fossil fuels or other unsustainable industries (such as weapons, tobacco etc) - then move banks, and tell your bank why
2. If you have a retirement fund, you could be inadvertently investing in unsustainable industries. If so, ask your fund manager to move to a more responsible fund
3. For investments in stocks, bonds, funds you can avoid investing in companies you believe are harmful and choose to invest in those that support more sustainable efforts
4. Swap your energy provider to a non fossil fuel based provider or support collective or community run wind and solar farms
5. Divest from fossil fuel or unethical companies

WHY THIS HELPS

Divestment is when people move away from industries and commercial activities that are unsustainable and instead choose investments, banks, energy providers, and other companies that are supporting renewable options, sustainable consumption and production, and industry development. As more and more people do this, it sends a message to companies to consider their business models and actions to support renewable energy, sustainable technologies, and more responsible products

2. DIVESTMENT: STATS



"The fossil fuel divestment movement is inspired by a powerful history of students and communities calling for institutional investments to match the values of those institutions. Most prominently it is modeled after the anti-apartheid movement, which demanded that institutions divest from companies operative in Apartheid South Africa."

(Lenferna, 2018)

"unpaid health bills of air pollution from fossil fuels was estimated at US\$5.3 trillion in 2015 – greater than global health spending."

(Kendrovski, 2015)

"While the demands of the fossil fuel divestment movement vary, the most common demand is for institutions to divest from owning shares in the 200 publicly traded fossil fuel companies with the highest amount of reported carbon reserves (AKA the Carbon Underground 200)."

(Lenferna, 2018)

"Divestment has stigmatised the fossil fuel industry and challenged its legitimacy, putting it on the defensive."

(Ansar, 2013 and Ayling, 2017)

"Just 100 companies -all in the oil and gas industry – are responsible for 71% of global carbon emissions."

(Griffin, 2017)

"Divestment's main focus is normative—raising awareness over the urgency of transitioning to a low-carbon economy."

(Ayling, 2017)

"Divestment's primary role is creating a new wave of the moral entrepreneur or norm entrepreneur, concerned with labelling a particular behaviour (carbon pollution) as morally reprehensible, and, by so doing, shifting attitudes about climate change mitigation."

(Ayling, 2015)

"Divestment..has changed public discourse in the UK and elsewhere, giving the media a new way to cover the climate change story and making it harder for politicians to show wilful blindness towards the issue."

(Thamotheram, 2018)

"...insurers have so far withdrawn about \$20 billion in share capital and bonds from the coal industry."

(Harrell, 2018)

In 2018, EY conducted a Global Corporate Divestment Study and found that "A record number (87%) of companies are planning to divest in the next two years – strikingly higher than the 43% reported in their 2017 study."

(EY, 2018)

"As of January 2018, the global Divestment movement has seen over 700 organisations from more than 76 countries with over \$5.5tn of assets under management commit to stop investing in fossil-fuel companies. Of this, \$1.5tn has been publicly committed to invest in climate solutions."

(Harrison, 2018)

2. DIVESTMENT: STATS



"The rapid rise of the fossil fuel divestment movement, the fastest growing divestment movement in history, is helping to draw attention to the moral urgency of acting on climate change and the broader harms of the fossil fuel industry."

(Kanbur, 2018)

"How to Divest? Step 1: film yourself going into your bank. Step 2: tell your bank you're pulling \$ out because it is investing into DAPL. Step 3: share on social media with #howtodivest and link to the site howtodivest.org. Step 4: transfer money to a local credit union / ethical bank & allow two weeks for pending transactions to clear."

(Harrison, 2018)

"Unless humans **transform the economy** in such a way that has no documented historic precedent, the earth will experience worsening food shortages and wildfires, and a mass die-off of coral reefs as soon as 2040."

(United Nation's Intergovernmental Panel on Climate Change, 2018)

"Over 1000 institutions worth almost 8 trillion USD have committed to divest from the world's biggest oil, coal, and gas companies."

(GoFossilFree, 2016)

there are a few dozen fossil-free mutual funds and ETFs that have launched in recent years as investor appetite has grown. Fossil Free Funds for example is an online tool, which uses Morningstar data along with the **Carbon Underground 200**, a list of the world's biggest oil, gas and coal companies, to produce reports on stocks and funds. Just type in the fund (for example, one you have in your 401(k)), and you'll get details on what portion of the fund's assets coincide with the CU200. The lower the overlap, the better.

(UNPRI, 2018)

"fossil fuel industries, like coal are already in steep decline, they are set to be **replaced by new technology** and hopefully **heavily regulated** out of existence in the coming years."

(IEA, 2018)

"They are are structures through which private investors fund innovative approaches to social issues. They are reimbursed — usually by governments — only if they meet agreed targets, they have raised more than \$364m since 2010."

(Brookings Institution, 2018)

"ExxonMobil's most recent Energy Outlook estimates that the fastest growing countries by GDP through 2040 will be China and India. They also will be the countries with the most rapid declines in energy intensity."

(ExxonMobil, 2018)

"Great Britain, France, Norway, Scotland, and China have all proposed phase-outs of conventional gasoline and diesel vehicles. Jurisdictions as varied as India, California, Germany, and the Netherlands may follow suit. At the same time, many nations and subnational jurisdictions have enacted carbon prices that could dampen demand for carbon intensive fuels."

(Sanzillo et al., 2018)

3. ENERGY POSITIVE HOMES: OVERVIEW



HIGH LEVEL ACTION

Enhance your comfort, save energy and money by adapting your home and your habits to be more efficient

EVERYDAY ACTIONS

1. Find ways to save on your energy bill via do-it-yourself or professional audit of energy used/saved/lost in your home and make simple changes
2. Regulate home temperatures better by adding verandas, green roofs, high inertia walls, and bio-based insulation
3. Adapt to the season: stay comfortable and save energy (wear a sweater, draw blinds in summer)
4. Take simple steps: seal windows and doorsteps, avoid thermic bridges, install double glass glazing, use LED bulbs, invest in high inertia radiators
5. Change habits: open the curtains for natural light; close shades in hot climates; cover pans when boiling, spend less time in shower, compost organics
6. Produce your own energy: install a small scale solar installation to power your home
7. Collect rainwater and reuse it for gardening, toilets, and washing machines
8. Use appliances as intended, consider buying more energy and water efficient appliances when replaced
9. Compare energy providers available and choose a more sustainable one (renewable energy)

WHY THIS HELPS

Sustainable construction, modes, appliances, and behaviors at home can dramatically reduce emissions and promote climate change mitigation. Energy efficiency and renewables can save money, generate utility savings over time, and increase the value of property. Making your home more sustainable can also help support the local economy and can increase the level of comfort by enhancing the quality of your life. Swapping to a renewable energy supply move us towards sustainable energy, but most of the savings can be attained through small technical interventions in the home, ensuring it is well insulated against hot and cold weather

3. ENERGY POSITIVE HOMES: STATS

MONEY

"Homes and commercial buildings consume 40% of the energy used in the United States. Of the \$2,000 the average American spends paying for energy annually, \$200 to \$400 could be going to waste from drafts, air leaks around openings, and outdated heating and cooling systems."

(US Dept. of Energy, 2016)

The US EPA guidelines for individual actions to reduce your energy impact on the environment include:
"Measure your Impact, Reduce Your Energy Waste through EnergyStar and Energy Efficiency, and Switch to Clean Energy Sources."

(US EPA, 2018)

"...buildings make up approximately 39 percent of total energy consumption and 68 percent of total electricity consumption. They also produce about 38 percent of nationwide carbon dioxide emissions."

(US EPA, 2016)

"In addition to energy efficiency techniques other emissions reduction opportunities for the home include actions such as: Making water and wastewater systems more energy-efficient; reducing solid waste sent to landfills; capturing and using methane produced in current landfills; reducing leakage from refrigeration equipment; and using refrigerants with lower global warming potentials."

(US EPA, 2016)

"...nearly every new home built today incorporates some form of energy efficiency. An impressive 84 percent of new homes feature green technology and efficient amenities. Their study also found that 65 percent of those polled currently use renewables in at least some of their home renovation or construction projects."

(McGraw Hill, 2014)

"Move your money to power your home and appliances with renewable energy instead of fossil fuels; ask your electric company, for example, at the PG&E website, in just a few clicks you can sign up for 100% renewable energy at the cost of just USD \$4.36 / month."

(PG&E, 2019)

Purchase carbon credits to offset your carbon footprint from emissions you contribute to through flights, transport, emissions from stays at hotels and meals at restaurants.

"Many carbon offset projects deliver a range of positive outcomes in addition to emission reductions. By purchasing offset units, individuals and organizations can support social, environmental or economic outcomes."

(Government of Australia, 2018)

"In grid-connected areas, rooftop panels can put electricity production in the hands of households. In rural parts of low-income countries, they can leapfrog the need for large-scale, centralized power grids, and accelerate access to affordable, clean electricity—becoming a powerful tool for eliminating poverty."

(Drawdown, 2017)

3. ENERGY POSITIVE HOMES: STATS



"Many developing economies still do not have mandatory building energy codes despite high construction rate in these regions."

(Global Status Report, 2018)

"The Building and Construction sector is a key actor in the fight against climate change: it accounted for 36% of final energy use and 39% of energy and process related emissions in 2017."

(Global Status Report, 2018)

"Kampala aims to replace 50 percent of household charcoal use with alternative cook fuels, such as biomass or briquettes made from organic waste."

(UNEP, 2017)

"Energy use per m2 in buildings needs to be reduced by 30% by 2030 (the "30 by 30" target) to be in line with the Paris Agreement and follow the Sustainable Development Scenario. Continued increases in population and floor area will be the principal factors of rising energy demand in buildings."

(Global Status Report, 2018)

"Space cooling and appliances are the fastest growing building end uses. Space cooling has grown in energy intensity per m2 in recent years."

(Global Status Report, 2018)

"The shift to cleaner cooking technology can deliver vital improvements in public health. More than 90% of Ugandan households, 101 along with many restaurants, schools, and other places that serve and prepare food, cook with wood charcoal."

(Fallon, 2016)

"The World Health Organization estimates exposure to cookstove smoke contributes to 13,000 premature deaths every year in Uganda."

(Global Alliance for Clean Cookstoves, 2016)

"Demonstrating the demand for solar energy is also unlocking urgently needed finance. Sixteen companies, supported by £2 million from the Solar Nigeria Programme, delivered small solar light and power systems to 170,000 Nigerian households during 2016 alone. By 2020, the initiative aims to reach 5 million homes."

(Solar Nigeria Programme, 2017)

"Energy-efficient housing is more affordable over its lifetime than non-efficient buildings."

(World Green Business Council, 2013)

"when benefits beyond direct costs are accounted for – like improved health, increased productivity, new jobs and less pollution – the benefits outweigh the costs many times over"

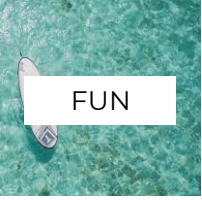
(Deutsche Bank, 2012)



FUN ACTIONS

CONNECTING ACTIONS TO IMPACTS
DATA MAPPING AND DEMONSTRATING THE IMPACT POTENTIAL

1. ENJOY THE JOURNEY: OVERVIEW



HIGH LEVEL ACTION

Staying local can reduce your carbon footprint, help local economies, and can be more cost effective. When you do go the distance, stay longer and choose better products

EVERYDAY ACTIONS

1. Research and ensure your tourist purchases and activities have a positive impact wherever you go
2. Consider vacations close to home and see the things that other people travel to your community to see
3. Travel slowly and take time to discover by taking the train/bus or cycling and walking
4. Visit fewer places but stay longer in each
5. If you take flights over 6000 km travel through hubs rather than direct and consider staying close to the venue to reduce travel time
6. Experience the real: eat and stay local, embrace diverse cultures, experience what the terrain has to offer (run, bike, hike), and help local economies
7. Refuse disposable plastics and other single-use items and minimize your visit's impacts
8. Collect memories from your trip that leave footprints in the sand, not on the planet - be mindful and proactive about the impacts of your fun times

WHY THIS HELPS

Being an ethically-conscious traveller can have positive impacts on the communities you are visiting and on your personal well-being. Opting for a vacation near your home - preferably in nature - can be rewarding for your health, the local economy, the environment, and, of course, your wallet! Many people want to see the world and many emerging economies depend on tourism revenues, small island development states in particular. So if you go the distance, If you travel for sun and surf, opt to stay longer, eat local, ditch disposables and be proactive in your footprint

1. ENJOY THE JOURNEY: STATS



"tourism's global carbon footprint has increased from 3.9 to 4.5 GtCO₂e, four times more than previously estimated, accounting for about 8% of global greenhouse gas emissions."

(Lenzen, 2018)

"Tourism-related emissions, on a global scale are significant. Two recently proposed strategies (1, encourage short-haul destinations, preferably with no flights, and 2, incentivise tourism operators to improve their energy and carbon efficiency) have yielded limited success."

(Lenzen, 2018)

"Tourism accommodation providers can especially utilize methods across all dimensions of the triple bottom line to incorporate sustainability into most operational aspects."

(Prud'homme & Raymond, 2016)

"Findings from a Delphi study suggest changes in tourist practices for a circular economy include recommendations including staycations and practices related to the use of specific products, for example using CO₂ neutral accommodation and sharing platforms."

(Sorensen, 2018)

"A study conducted by Cleantech Group (CTG), whose main goal is to assist clients in "accelerating sustainable innovation," found that Airbnb "promotes a more efficient use of existing resources" and labeled them as "an environmentally sustainable way to travel"

(Midgett, 2018)

"those who participate in the sharing economy often do so because they want to take care of the environment and one can expect these individuals to be more environmentally conscientious in their actions."

(Böcker & Meelen, 2016)

"Accommodation sharing in the context of the tourism industry is significantly less resource intensive than the traditional accommodation sector, creating positive impacts in terms of the environmental dimension of the triple bottom line."

(Zvolaska, 2015)

"Bed and breakfast establishments, for example, can incorporate guest towel reuse programs to reduce freshwater consumption, benefit the local community by employing local staff and sourcing food locally, implement recycling in the guest rooms and common areas, and do much more to address all dimensions of the triple bottom line."

(van Haastert & de Grosbois, 2010)

"When looked at from a per-capita basis, small island nations have the highest per-capita 'destination based footprints'. The Maldives have it the worst, with 95% of the island's tourism-related emissions coming from international visitors."

(Lenzen, 2018)

"Take-off and landing are the most polluting parts of any flight. Hence doing as less often as possible has the largest impact. Taking into account that many SIDs GDPs are based on tourism revenue, staying longer (not 'island hopping') has value."

(United Nations World Tourism Organization, 2008)

1. ENJOY THE JOURNEY: STATS

FUN

"We found that the per capita carbon footprint increases strongly with increasing affluence (wealthier people travel more), decreases weakly with improving technology (saving energy means emitting less), and that time has no significant bearing"

(Lenzen et al, 2018)

"Staying local and taking walks in your neighborhood, the staycation is by far the greenest option of all...the second-best thing to staying home — a more generous definition of staycation — is venturing just a few hours away, to a park or town that you haven't already seen many times. The quick trip can seem as if you're a world away, without the hassle of navigating a Transportation Security Administration screening or a long stint in the car."

(McKibben, 2016)

"Luxury tourism is notoriously problematic for some developing destinations as it diverts often scarce water and energy resources from the host community **to the tourist** (as they have more money)...luxury tourists generally consume even **more than your "average" tourist**, intentionally or not."

(Moscardo, 2017)

"Food is the second largest CO2 emitter in the tourism industry. In small islands like Mauritius, 98% of food is imported. Asking people to enjoy local foods will be both beneficial for the planetary and the social aspect."

(United Nations World Tourism Organization, 2008)

"Travel is highly income-elastic and carbon-intensive. As global economic development progresses, especially among high-income countries and regions experiencing rapid economic growth, consumers' demand for travel has grown much faster than their consumption of other products and services. Driven by the desire for exotic travel experiences and an increasing reliance on aviation and luxury amenities, affluence has turned tourism into a carbon-intensive consumption category. Global demand for tourism is outstripping the decarbonization of tourism operations, and, as a result, is accelerating global carbon emissions. At the same time, at least 15% of global tourism-related emissions are currently under no binding reduction target as emissions of international aviation and bunker shipping are excluded from the Paris Agreement. In addition, the United States, the most significant source of tourism emissions, does not support the Agreement."

The United States tops the carbon footprint ranking (Fig. 1, top left) under both DBA (1,060 MtCO₂e) and RBA (909 MtCO₂e) accounting perspectives, followed by China (528/561 MtCO₂e), Germany (305/329 MtCO₂e) and India (268/240 MtCO₂e)

(Lenzen et al, 2018)

"...one of the most notable changing trends in the tourism industry is the growing impact of affluent travelers from "emerging" market countries on travel spending and investment. Collectively, these countries are now beginning to outpace their "developed" (OECD definitions of the terms "emerging" and "developing") market counterparts when it comes to creating affluent households...Within the next decade the number of households making at least US\$100,000 annually will increase by 30 million, with one out of three of these households located in emerging markets. And just as affluence in these markets continues to rapidly grow, so does their spending on travel. There is a projected growth of \$1.3 billion in transportation spending in the period 2012 to 2020."

(Martin, 2015)

"Plastic is of great symbolic and actual value in the tourism sector. Most states do not have the infrastructural means to recycle, hence cutting plastic from tourist activities can have a huge impact."

(United Nations World Tourism Organization, 2008)

1. ENJOY THE JOURNEY: STATS

FUN

"The importance of tourism in alleviating poverty in emerging economies has been widely recognized...Many national governments in developing countries have made explicit policy statements asserting a role for tourism in strategies for the reduction of poverty; about 80% of African Poverty Reduction Strategy Papers include a reference to encouraging tourism."

(Abdo, 2015)

"Travel and tourism is a significant source of employment, especially for those with limited access to labor markets, such as women, young, immigrant and rural populations... Women are strongly represented: they account for between 60-70% of total labor force."

(ILO, 2011)

"Travel and tourism generated US\$7.6 trillion (10.2% of global GDP) and 292 million jobs in 2016 (contributing 40% of GDP in developing economies); the sector contributed to direct GDP growth at 3.1% and supported 6 million net additional jobs in the sector in 2016 (equivalent to 1 in 10 jobs in the global economy), and is projected to create 380 million jobs by 2027. The sector accounted for 6.6% of total global exports and almost 30% of total global service exports in advanced economies and 66% in developing economies; and is the main source of foreign exchange for 47 of the World's 50 Least Developed Countries."

(World Travel and Tourism Council, 2017)

"...there is robust empirical evidence that a substantial amount of the financial flows from tourism can accrue to poor households. A detailed study of the tourism value chain in Luang Prabang, a World Heritage Site in northern Laos, concluded that benefits earned by the poor are equivalent to approximately 27% of total tourism expenditure within the destination."

(Ashley, 2006)

A study on the nature tourism areas of Northern KwaZulu Natal (South Africa) found that "benefits accruing to the poor (unskilled and semi-skilled workers together with small enterprise and communities) amounted to 37% of tourist expenditure in the wildlife areas."

(Mthembu, 2018)

A study on the protected areas of Namibia has shown "benefits to the poor amount to around 17% of total tourism turnover at the Parks."

(Abdo, 2015)

On the other hand, tourism in developing and poor countries tourism can be unethical, especially luxury tourism. The Maldives for example is a luxury destination where "tourism accounts for approximately 41.5% of national GDP", economic benefits are not equally distributed and an over-reliance on tourism results in the demise of traditional industries. Hotels are scattered over numerous islands which have no other facilities, many of those working in the tourism industry in the Maldives have to live away from home for months on end, separated from family and friends. They also often live in conditions far removed from the "luxury" experience of the tourist, they work seven-day weeks and often go months without pay. And the Maldives aren't unique in this – the situation is similar in many developing countries that are engaging with the luxury tourism market.

(World Travel & Tourism Council, 2015)

1. ENJOY THE JOURNEY: STATS



FUN

"Many developing countries consider tourism to be important for economic progress and poverty reduction. However, it is also clear that the link between tourism and economic growth and poverty reduction is not automatic. It very much depends on whether tourism generates employment opportunities, creates linkages – in particular with agriculture and service-providing sectors – and stimulates the development of basic infrastructure through the construction of roads, port and airport facilities and the provision of financial services from which the economy as a whole can benefit. It also depends on whether the development of tourism is guided by a national strategy comprising policy, regulatory and institutional frameworks with sufficient incentives to stimulate the development of supply capacity in national markets. Equally important is the extent to which the national strategy limits financial leakages from the domestic economy, which appears to be a perennial problem in many developing countries, and the efforts made to minimize the adverse impact of tourism on the environment and on cultural heritage. While the role of tourism in structural economic progress and sustainable development is not a new topic on the international agenda, how to make tourism more sustainable and contribute to developing countries' sustainable development objectives is still a challenge that requires urgent attention."

(UNCTAD, 2013)

"While Europe and North America remain the traditional destinations, the market share of emerging economies increased considerably from 30 per cent in 1980 to 47 per cent in 2010. With emerging economy destinations growing faster than advanced economy destinations, the market share of the former will expand further (figure 2). As regards source markets, generally about three quarters of all international tourists are from developed countries."

(UNCTAD, 2013)

"International tourism is a key source of foreign exchange and thus a crucial contributor to the balance of payments and to macroeconomic stability, especially in developing countries...tourism exports, measured by international tourism receipts, reached a record of \$1,030 billion in 2011, or approximately \$1,000 per international tourist. When the value of international passenger transport is added, the overall income generated by inbound travel and tourism in 2011 exceeds \$1.2 trillion."

(UNCTAD, 2013)

"...in terms of the sector's employment-generating capacity, one job in the core tourism industry creates about 1.5 additional or indirect jobs in tourism-related economic activities. The majority of tourism-related businesses in developing countries, particularly in least developed countries (LDCs), tend to be small, medium-sized and micro enterprises, many of which are operating in the informal economy."

(ILO, 2011)

"The tourism industry generates substantial economic benefits to both host and guest countries. Especially in developing countries, one of the primary motivations for a region to promote itself as a tourism destination is the expected economic improvement."

(Nayomia & Gnanapala, 2015)

2. STAY CURIOUS: OVERVIEW



HIGH LEVEL ACTION

Embrace a life of constant learning, adventure and curiosity and keep an open mind

EVERYDAY ACTIONS

1. Adopt a lifelong learning approach to keep your mind thirsty and active
2. Seek out and support new ideas to make the world a better place
3. Learn from nature and see where it fits in with your life
4. Discover more about the systems that sustain us - like where your food comes from and make more informed choices
5. Choose technologies and apps that make it easier for you to live more sustainably
6. Foster an open and independent mindset
7. Be future focused and stay positive about how to contribute to a better world
8. Learn new things through formal and informal education

WHY THIS HELPS

Learning, curiosity, discovery, wonderment- whatever you want to call it, life is made more valuable through the addition of new knowledge, ideas and actions. By embracing curiosity, you can gain all sorts of lifelong benefits, from a more flexible outlook on life and work, all the way to setting a better example for our kids and communities.

2. STAY CURIOUS: STATS

FUN

"people with more resources, who tend to value self-development and self-expression, should be happier from purchasing experiences than material goods...Lower-class individuals, in contrast, live in a world with less financial, educational, and occupational resources."
(Kraus et al., 2012)

"Loneliness and social isolation may represent a greater public health hazard than obesity, and their impact has been growing and will continue to grow."
(Holt-Lunstad, 2017)

"staying mentally active as we age can keep neuronal BDNF signaling at a constant rate, which may limit memory and cognitive decline."
(Chen, et al., 2010)

A University of California Irvine study suggests that "mental activity can stave off age-related cognitive and memory decline."
(Chen, et. al., 2010)

"learning can lead to improved well-being, increased efficacy, protection and recovery from mental health difficulties, and more effective coping, including coping with physical ill-health."
(Hammond, 2004)

"Approximately 42.6 million adults over age 45 in the United States are estimated to be suffering from chronic loneliness."
(Anderson, 2010)

"Lonely respondents were less likely to be involved in activities that build social networks, such as attending religious services, volunteering, participating in a community organization or spending time on a hobby."
(Anderson, 2010)

"13% of lonely respondents felt they have fewer deep connections now that they keep in touch with people using the Internet, compared to 6% of non-lonely respondents."
(Anderson, 2010)

"In the past, loneliness has been approached mainly from a cultural or social point of view, but work over the past decade by social neuroscientists such as John Cacioppo at the University of Chicago has provided scientific evidence that loneliness causes physiological events that wreak havoc on our health. Persistent loneliness leaves a mark via stress hormones, immune function and cardiovascular function with a cumulative effect"
(Griffin, 2010)

A 2010 study commissioned by The Mental Health Foundation, cited a link between our "individualistic society" and the increase in **common mental health disorders** in the last 50 years...mental health problems occur more frequently in unequal societies where vulnerable people are often left behind. By squandering "social capital" in the individualistic pursuit of greater wealth, or treating social networks as incidental, are we neglecting a part of life that makes us happy and keeps us healthy for longer?
(Griffin, 2010)

"10 top benefits of lifelong learning: a self-fulfilling life, valuable relationships, active in society, meaningful life, adaptable to change, contributions to society, increased wisdom, instilled curiosity, opened mind, and developed natural abilities."
(Laal, 2012)

"...effects of lifelong learning on well-being, which mainly focused on quality of life...there is a significant relationship between certain types of learning, specifically informal learning, and well-being."
(Jenkins & Mostafa, 2015)

2. STAY CURIOUS: STATS

FUN

"learning isn't simply about earning degrees or attending storied institutions. Books, online courses, MOOCs, professional development programs, podcasts, and other resources have never been more abundant or accessible, making it easier than ever to make a [habit of lifelong learning](#). Every day, each of us is offered the opportunity to pursue intellectual development in ways that are tailored to our learning style."

(Coleman, 2017)

"The links between formal education and lifetime earnings are well-studied and substantial...controlling for other factors, men and women can expect to earn \$655,000 and \$445,000 more, respectively, during their careers with a bachelor's degree than with a high school degree, and graduate degrees yield further gains."

(Tamborini et al., 2015)

"the ways in which our rapidly shifting professional landscape — the disruptive power of automation, the increasing number of jobs requiring expertise in coding — necessitates that workers focus continually on mastering new technologies and skills."

(The Economist, 2017)

"50% of jobs would be redundant by 2025 due to technological innovation."

(Andrew & Worthington, 2014)

"Outside of universities, ongoing learning and skill development is essential to surviving economic and technological disruption."

(Coleman, 2017)

"Trends including AI, robotics, and offshoring mean constant shifts in the nature of work. And navigating this ever-changing landscape requires continual learning and personal growth."

(Coleman, 2017)

"while cognitive activity can't change the biology of Alzheimer's, learning activities can help [delay symptoms](#), preserving people's quality of life."

(Gidicsin et al., 2017)

"reading, even for short periods of time, can dramatically reduce your stress levels."

(Coleman, 2012)

"[learning to play a new instrument](#) can offset cognitive decline, and [learning difficult new skills](#) in older age is associated with improved memory."

(Cole, 2014)

"Your mind may be the closest thing to the Holy Grail of longevity and happiness. Education has been widely documented by researchers as the single variable tied most directly to improved health and longevity. And when people are intensely engaged in doing and learning new things, their well-being and happiness can blossom."

(Cutler, 2006)

"Being open and curious has profound personal and professional benefits."

(Coleman, 2017)

"Our capacity for learning is a cornerstone of human flourishing and motivation."

(Coleman, 2017)

"lifelong learning isn't simply an economic imperative but a social, emotional, and physical one as well. We live in an age of abundant opportunity for learning and development. Capturing that opportunity — maintaining our curiosity and intellectual humility — can be one of life's most rewarding pursuits."

(Coleman, 2017)

3. CHOOSE EXPERIENCES: OVERVIEW



HIGH LEVEL ACTION

Consider spending more time and resources on the experiences that add value to your life

EVERYDAY ACTIONS

1. Engage in experiences and services that add value to your life
2. Find ways to spend time with people you care about and make you laugh
3. Spend more time connecting with nature and natural spaces
4. Opt for active recreational choices for increased health and wellbeing (sports, games and outdoor activities)
5. Find daily ways to relax and take time out to reduce stress and anxiety
6. Give yourself (more) digital detox time and embrace analog experiences
7. Pursue purpose and passions, not possessions
8. Consider the impacts your current actives have on your life, and do more of what makes you happy

WHY THIS HELPS

We are a sum of our experiences. Our identity is not defined by our possessions, but is an accumulation of the places we've been, lessons we've learned, people we have interacted with, and the experiences we've had (good and bad!). Experiences we lock into our memories through daily living help create who we are. Emerging science highlights that the aspirations people have sometimes differ from what society labels as "the good life". Traveling, spending time in nature and with family and friends, learning and seeing new things and the benefits of an active life seem to contribute to happier and healthier lives.

3. CHOOSE EXPERIENCES: STATS

FUN

"...waiting for experiences tends to be more positive than waiting for possessions. Four studies demonstrate that people derive more happiness from the anticipation of experiential purchases and that waiting for an experience tends to be more pleasurable and exciting than waiting to receive a material good."

(Kumar, 2014)

"as we consume less, we are doing more...If you think about the 20th century, the big dominant value system was materialism, the belief that if we had more stuff we'd be happier from possessions to experience...The big change to what I call experientialism is more about finding happiness and status in experiences instead."

(Wallman, 2015)

"One of the enemies of happiness is adaptation. We buy things to make us happy, and we succeed. But only for a while. New things are exciting to us at first, but then we adapt to them."

(Gilovich, 2015)

"We are less likely to compare experiential purchases than we are products, in a way that means we are all happy with what we buy, regardless of what we can afford...So if you have a Nissan and your neighbour has a Porsche, there's no doubt who has the better car, and if you ask the Nissan driver to swap, they will...but if you ask people who went on holiday to the Seychelles or south Wales, it's clear who had the fancier holiday, but surveys show the person who went to Wales won't swap because they had an equally good time."

(Wallman, 2015)

"That's the magic of experientialism. It's not anti-consumerist or anti-capitalist. Money is still going into the economy and creating jobs – we're just spending it on experiences. I've seen a transformation in my own life. At my wife's prompting, I've just acquired a second pair of trousers, but I'm holding out with his one pair of shoes and five holey T-shirts. I'd rather do things. I took the kids to the Natural History Museum on Sunday. We went camping recently, I go climbing, play football. And it makes us happier."

(Wallman, 2015)

"An advanced country may be able to decouple economic growth and increasing volumes of material goods consumed. A sustainable economy does not necessarily have to be a no growth economy."

(Goodall, 2011)

"Our experiences are a bigger part of ourselves than our material goods. You can really like your material stuff. You can even think that part of your identity is connected to those things, but nonetheless, they remain separate from you. In contrast, your experiences really are part of you. We are the sum total of our experiences."

(Gilovich, 2015)

"Stress levels increase with accumulation of material goods, and affects good health ultimately."

(Saxbe and Repetti, 2010)

"We consume experiences directly with other people and after they're gone, they're part of the stories that we tell to one another."

(Gilovich, 2015)

3. CHOOSE EXPERIENCES: STATS

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"Consumers' evaluations of their material goods went down from the time of the initial purchase to the present, but their evaluations of their experiences tended to go up, indicative of hedonic adaptation to the possessions but something quite different for their experiences...there are three potential drivers of this behavior: experiences are more open to positive reinterpretation, they tend to become more meaningful parts of one's identity, and they do more to foster social relationships."

(Gilovich & Kumar, 2015)

"The growing preference for experiences, especially among younger consumers, is in turn a reflection of the increasing growth of the service sector over manufacturing, especially in developed economies. This so-called 'servitization' of industry holds out the prospect of a more resource light economy in the future: one in which value is created less through the use of physical resources and more through the creation of non-physical, psychological or social experiences."

(Neely, 2008)

"There is a shift towards collaborative consumption and sharing mirrors another related trend in consumption: namely, a move away from the ownership and consumption of physical things towards the consumption of intangible experiences."

(Dykstra, 2012)

After spending ten years traveling around the US, interviewing both parents and children about their experiences in nature, in both rural and urban areas child-advocacy expert Richard Louv compared their anecdotes with a growing body of emerging scientific research that suggests children who are given early and ongoing positive exposure to nature thrive in intellectual, spiritual, and physical ways that their "shut-in" peers do not. Over the past 30 years, he says, children of the digital age have become increasingly alienated from the natural world. Citing skyrocketing rates of childhood obesity, diabetes, depression, and ADHD, he links a lack of interaction with nature to a slow but steady erosion of mental, physical, and spiritual health.

(Louv, 2011)

"What would our lives be like if our days and nights were as immersed in nature as they are in electronics? How can each of us help create that life-enhancing world, not only in a hypothetical future, but right now, for our families and for ourselves?"

(Louv, 2011)

"In 2018, an estimated 55.3 percent of the world's population lived in urban settlements. By 2030, urban areas are projected to house 60 percent of people globally and one in every three people will live in cities with at least half a million inhabitants.."

(United Nations, 2018)

"The traditional ways that humans have experienced nature are vanishing, along with biodiversity. At the same time, our culture."

(Louv, 2011)

"The natural world is not only a set of constraints but of contexts within which we can more fully realize our dreams."

(Shepard, 1996)



REFERENCES

ALL THE SOURCES FOR THE DATA AND RESEARCH PRESENTED HERE

REFERENCES

- Abarca-Gómez, L., Abdeen, Z.A., Hamid, Z.A., Abu-Rmeileh, N.M., Acosta-Cazares, B., Acuin, C., Adams, R.J., Aekplakorn, W., Afsana, K., Aguilar-Salinas, C.A. and Agyemang, C., 2017. Worldwide trends in body-mass index, underweight, overweight, and obesity from 1975 to 2016: a pooled analysis of 2416 population-based measurement studies in 128·9 million children, adolescents, and adults. *The Lancet*, 390(10113), pp.2627-2642. [www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(17\)32129-3.pdf](http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(17)32129-3.pdf)
- Abdo, Hayat Abdulahi Abdo, Economist, Global Manufacturing, Agribusiness and Services (CMGSF), 2015. Poverty Literature Review – Tourism Sector International Finance Corporation, World Bank Group. https://www.ifc.org/wps/wcm/connect/aa97f1004db75705849ea4b7d7326c0/MAS_Tourism.docx?MOD=AJPERES.
- Anderson, G. Oscar. Loneliness Among Older Adults: A National Survey of Adults 45+. Washington, DC: AARP Research, September 2010. <https://doi.org/10.26419/res.00064.001>
- Anderson K., “Be an Opportunity Maker”, TED. 2014. https://www.ted.com/talks/kare_anderson_be_an_opportunity_maker
- Andrew, P., Ip, J. and Worthington, J., 2014. Fast Forward 2030, The Future of Work and the Workplace. Los Angeles: CBRE. Work of the Future–2030, 15.
- Ansar, A., Caldecott, B.L. and Tilbury, J., 2013. Stranded assets and the fossil fuel divestment campaign: what does divestment mean for the valuation of fossil fuel assets? And Ayling, J. A Contest for Legitimacy: The Divestment Movement and the Fossil Fuel Industry. *Law Policy* 2017, 39, 349–371.
- Ajzen, I., 1991. The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), pp.179-211.
- Akenji, L., Lettenmeier, M., Koide, R., Toivik, V., Amellina, A., 2019. 1.5 Degree Lifestyles: Targets and options for reducing lifestyle carbon footprints. Institute for Global Environmental Strategies. <https://pub.iges.or.jp/pub/15-degrees-lifestyles-2019>
- Akenji, L., Bengtsson, M., Bleischwitz, R., Tukker, A. and Schandl, H., 2016. Ossified materialism: Introduction to the special volume on absolute reductions in materials throughput and emissions. *Journal of Cleaner Production*, 132, pp.1-12.
- Aleksandrowicz, L., Green, R., Joy, E.J., Smith, P. and Haines, A., 2016. The impacts of dietary change on greenhouse gas emissions, land use, water use, and health: a systematic review. *PLoS one*, 11(11), p.e0165797. <https://doi.org/10.1371/journal.pone.0165797>
- Ashley, C., 2006. Participation by the poor in Luang Prabang tourism economy: Current earnings and opportunities for expansion. Overseas Development Institute (ODI) Working Paper, 273. <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/82.pdf>
- Asian Development Bank, 2013. Gender Toolkit: Transport, Maximizing the Benefits of Improved Mobility for All. www.adb.org/sites/default/files/institutional-document/33901/files/gender-tool-kit-transport.pdf
- ADB: Asian Development Bank, Independent Evaluation Department. (2010). Reducing Carbon Emissions from Transport Projects: ADB Evaluation Study (pp. 1-107). <https://www.oecd.org/derec/adb/47170274.pdf>
- Auger, P. and Devinney, T.M., 2007. Do what consumers say matter? The misalignment of preferences with unconstrained ethical intentions. *Journal of Business Ethics*, 76(4), pp.361-383.
- Australia Environment Protection Authority, 2012. Waste and Resource Recovery Resource Recovery Unit. Materials Fact Sheets -Electronic Waste. <https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/managewaste/120351-electronic-waste.pdf?la=en&hash=300E877F2C8350598C4A2D9E29787F7E6F12F71E>
- Ayling, J.; Gunningham, N. Non-state governance and climate policy: The fossil fuel divestment movement. *Clim. Policy* 2017, 17, 131–149. Accessed on 31 January, 2019 from: Bergman, N., 2018. Impacts of the fossil fuel divestment movement: effects on finance, policy and public discourse. *Sustainability*, 10(7), p.2529., and from: <https://www.mdpi.com/2071-1050/10/7/2529/pdf>
- Banerjee, A.V., Banerjee, A. and Duflo, E., 2011. Poor economics: A radical rethinking of the way to fight global poverty. Public Affairs.
- Barkan, R., Ayal, S. and Arieli, D., 2015. Ethical dissonance, justifications, and moral behavior. *Current Opinion in Psychology*, 6(DEC), pp.157-161.
- Babutsidze, Z. and Chai, A., 2018. Look at me Saving the Planet! The Imitation of Visible Green Behavior and its Impact on the Climate Value-Action Gap. *Ecological Economics*, 146, pp.290-303.
- Beatley, T., 2017. Handbook of Biophilic City Planning & Design. Island Press.

REFERENCES

Bengtsson, M., Alfredsson, E., Cohen, M., Lorek, S. and Schroeder, P., 2018. Transforming systems of consumption and production for achieving the sustainable development goals: moving beyond efficiency. *Sustainability Science*, pp.1-15.

Balde, C.P., Forti, V., Gray, V., Kuehr, R. and Stegmann, P., 2017. The global e-waste monitor 2017: Quantities, flows and resources. United Nations University, International Telecommunication Union, and International Solid Waste Association. <http://collections.unu.edu/view/UNU:6341>

Belk, R. (2014). You are what you can access: Sharing and collaborative consumption online. *Journal of Business Research*, 67(8), 1595-1600. doi:10.1016/j.jbusres.2013.10.001

Blake, J., 1999. Overcoming the 'value-action gap' in environmental policy: Tensions between national policy and local experience. *Local environment*, 4(3), pp.257-278.

Blondel, B.E.N.O.I.T., Mispelon, C. and Ferguson, J., 2011. Cycle more Often 2 cool down the planet. *European Cyclists Federation*.

Böcker, L., & Meelen, T. (2016). Sharing for people, planet or profit? Analysing motivations for intended sharing economy participation. *Environmental Innovation and Societal Transitions*, doi:10.1016/j.eist.2016.09.004

Boston Consulting Group (BCG). 2018. Tackling the 1.6-billion-ton food loss and waste crisis.

Bradford A., Broude S., Truelove A., 2018. Trash in America, Moving from Destructive Consumption to a Zero-Waste System. US PIRG Education Fund. <https://uspirgedfund.org/sites/pirg/files/reports/US%20-%20Trash%20in%20America%20-%20Final.pdf>

Brookings Institution, 2018. Global Impact Bond Database. <https://www.brookings.edu/series/impact-bonds/>

Brooks, A.L., Wang, S. and Jambeck, J.R., 2018. The Chinese import ban and its impact on global plastic waste trade. *Science advances*, 4(6), p.eaat0131.

Bureau of International Recycling, 2015. <http://www.bir.org/industry/textiles/>

Canary, J., 2018. U.S. Department of Labor, Field Assistance Bulletin No. 2018-01-Guidance to the Employee Benefits Security Administration. <https://www.dol.gov/agencies/ebsa/employers-and-advisers/guidance/field-assistance-bulletins/2018-01>

Carden, L. and Wood, W., 2018. Habit formation and change. *Current Opinion in Behavioral Sciences*, 20, pp.117-122.

Chen, Lulu & Rex, Christopher & Sanaiha, Yas & Lynch, Gary & Gall, Christine. (2010). Learning induces neurotrophin signaling at hippocampal synapses. *Proceedings of the National Academy of Sciences of the United States of America*. 107. 7030-5. 10.1073/pnas.0912973107.

Chin, H. 2013. Global Report on Human Settlements: Sustainable Urban Mobility in South-Eastern Asia and the Pacific. UN Habitat report. unhabitat.org/wp-content/uploads/2013/06/GRHS.2013.Regional.South_Eastern.Asia_and_Pacific.pdf

China Water Risk, 2016. Today's Fight for the Future of Fashion - Is there room for fast fashion in a Beautiful China? available at: <http://chinawaterrisk.org/wpcontent/uploads/2016/08/China-Water-Risk-Brief-Todays-Fight-for-the-Future-for-theFuture-17082016-FINAL.pdf>

Church, A., Mitchell, R., Ravenscroft, N., & Stapleton, L. (2015). Growing your own: A multi-level modelling approach to understanding personal food growing trends and motivations in Europe. *Ecological Economics*, 110, 71-80. doi:10.1016/j.ecolecon.2014.12.002

Circle Economy and MVO Nederland, 2015. The Potential for High Value Reuse in a Circular Economy. Pp.9-24, <https://www.circulairondernemen.nl/uploads/27102a5465b3589c6b52f8e43ba9fd72.pdf>

City of New York, 2019. Department of Sanitation. Clothing and textile drop off. <https://www1.nyc.gov/assets/dsny/site/services/donate-goods/textiles>

City of Portland, 2008a. Portland bicycle counts 2008. Report for the Portland Bureau of Transportation, Portland, OR. www.portlandonline.com/shared/cfm/image.cfm?id=217489

Clark, D., 2007. The rough guide to ethical living. Rough Guides.

Cleveland, D.A., Phares, N., Nightingale, K.D., Weatherby, R.L., Radis, W., Ballard, J., Campagna, M., Kurtz, D., Livingston, K., Riechers, G. and Wilkins, K., 2017. The potential for urban household vegetable gardens to reduce greenhouse gas emissions. *Landscape and Urban Planning*, 157, pp.365-374. doi:10.1016/j.landurbplan.2016.07.008

Cole, Diane, 2014. Your Aging Brain Will Be in Better Shape If You've Taken Music Lessons. *National Geographic*. <https://news.nationalgeographic.com/news/2014/01/140103-music-lessons-brain-aging-cognitive-neuroscience/>

REFERENCES

Coleman, John, 2017. Your Health, Your Wallet, and Your Social Life. Harvard Business Review. <https://hbr.org/2017/02/lifelong-learning-is-good-for-your-health-your-wallet-and-your-social-life>

Coleman, John, 2012. For Those Who Want to Lead, Read. Harvard Business Review. <https://hbr.org/2012/08/for-those-who-want-to-lead-read>

Conner-Simons, A., 2017. How ride-sharing can improve traffic, save money, and help the environment. MIT. <http://news.mit.edu/2016/how-ride-sharing-can-improve-traffic-save-money-and-help-environment-0104>

Corporation of Chennai, 2014. Non-motorised transport policy. itdp.in/wp-24content/uploads/2014/10/NMT-Policy.pdf

Cowart, W., Pesinova, V. and Saile, S., 2003. An assessment of GHG emissions from the transportation sector. US Environmental Protection Agency. <https://www3.epa.gov/ttnchie1/conference/ei12/green/pesinova.pdf>

Craig, W.J., Mangels, A.R., 2009. Position of the American Dietetic Association: Vegetarian diets. 109:1266-1282.

Credit Suisse, 2012. Investing for impact. How social entrepreneurship is redefining the meaning of return. Credit Suisse Research Institute, in collaboration with the Schwab Foundation for Social Entrepreneurship. <https://www.issuelab.org/resource/investing-for-impact-how-social-entrepreneurship-is-redefining-the-meaning-of-return.html>

Cutler, D.M. and Lleras-Muney, A., 2006. Education and health: evaluating theories and evidence (No. w12352). National Bureau of Economic Research.

Deutsche Bank, 2012. The Benefits of Energy Efficiency in Multifamily Affordable Housing. http://energyefficiencyforall.org/sites/default/files/DBLC_Recognizing_the_Benefits_of_Efficiency_Part_B_1.10%20%281%29.pdf

Di Maio, F. and Rem, P.C., 2015. A robust indicator for promoting circular economy through recycling. Journal of Environmental Protection, 6(10), p.1097. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1025.1393&rep=rep1&type=pdf>

Drawdown, 2017, available online: <https://www.drawdown.org/solutions/electricity-generation/rooftop-solar>

Dykstra, J.A., 2012. Why Millennials don't want to buy stuff. Fast Company. www.fastcompany.com/1842581/why-millennials-dont-want-buy-stuff.

Ernst & Young (EY), 2018. How can divesting fuel your future growth? Global Corporate Divestment Study 2018. [https://www.ey.com/Publication/vwLUAssets/ey-global-corporate-divestment-study-2018/\\$FILE/ey-global-divestment-study-2018.pdf](https://www.ey.com/Publication/vwLUAssets/ey-global-corporate-divestment-study-2018/$FILE/ey-global-divestment-study-2018.pdf)

EY, 2011. Innovating for the Next Three Billion. Ernst & Young. https://www.ey.com/Publication/vwLUAssets/Innovating-for-the-next-three-billion/%24FILE/Innovating_for_the_next_three_billion_FINAL.pdf

The Economist, 2017. Lifelong learning is becoming an economic imperative. <https://www.economist.com/special-report/2017/01/12/lifelong-learning-is-becoming-an-economic-imperative>

Ellen MacArthur Foundation, 2019. Make Fashion Circular #WearNext Social Media Campaign. <https://www.ellenmacarthurfoundation.org/news/wearnext-make-fashion-circular-joins-forces-with-city-of-new-york-and-fashion-industry-to-tackle-clothing-waste>

Ellen MacArthur Foundation, 2017. A new textiles economy: Redesigning fashion's future. https://www.ellenmacarthurfoundation.org/assets/downloads/publications/A-New-Textiles-Economy_Full-Report_Updated_1-12-17.pdf

Ellen MacArthur Foundation, 2016. The New Plastics Economy: Rethinking the Future of Plastics. https://www.ellenmacarthurfoundation.org/assets/downloads/EllenMacArthurFoundation_TheNewPlasticEconomy_Pages.pdf

Epstein, M.J., 2018. Making sustainability work: Best practices in managing and measuring corporate social, environmental and economic impacts. Routledge. <https://www.taylorfrancis.com/books/9781351280112>

European Parliament. 2017. Press Room News. Making consumer products more durable and easier to repair. <http://www.europarl.europa.eu/news/en/press-room/20170629IPR78633/making-consumer-products-more-durable-and-easier-to-repair>

REFERENCES

European Parliament, Directorate General for Internal Policies, Policy Department, Economic and Scientific Policy, 2016. Study on "A longer lifetime for products: benefits for consumers and companies. [http://www.europarl.europa.eu/RegData/etudes/STUD/2016/579000/IPOL_STU\(2016\)579000_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2016/579000/IPOL_STU(2016)579000_EN.pdf)

Eurostat and Union européenne. Commission européenne, 2011. Energy, transport and environment indicators (Vol. 2). Office for Official Publications of the European Communities. <http://ec.europa.eu/eurostat/documents/3217494/8435375/KS-DK-17-001-EN-N.pdf>

Evans, J.S.B., 1989. Bias in human reasoning: Causes and consequences. Lawrence Erlbaum Associates, Inc.

ExxonMobil, 2018 Outlook for Energy: A View to 2040. p. 60

Fallon, A. (10 June 2016). Kampala aims to lead African cities in fight against climate change. Citiscope. Available: <http://citiscope.org/story/2016/kampala-aims-lead-african-cities-fight-against-climate-change>.

Federal Highway Administration (FHWA). 2017. Highway Statistics 2015. Washington, DC: US

Department of Transportation. www.fhwa.dot.gov/policyinformation/statistics/2015

Fernbach, P. M., Kan, C., & Lynch, J. G. (2015). Squeezed: Coping with constraint through efficiency and prioritization. Journal of Consumer Research, 41, 1204–1227. doi:10.1086/679118

Fernández-Trapa, V., Department Officer; Sustainable Development of Tourism; vftrapa@unwto.org; World Tourism Organization (UNWTO); C/ Poeta Joan Maragall 42, 28020 Madrid, Spain; Tel: +34 91 567 82 40 Fax: 91 571 37 33

Fiduciary Duty Project, 2018. UN PRI, Generation Foundation and UN Finance Initiative. Presentation. https://www.fiduciaryduty21.org/uploads/8/0/3/0/80301594/fiduciary_duty_in_the_21st_century_june_2018.pdf

Fiduciary Duty Project, 2016. UN PRI, Generation Foundation and UN Finance Initiative. <https://www.unenvironment.org/news-and-stories/story/time-retire-unsustainable-pensions>

Fisheries, H.S., 2014. Aquaculture for Food Security and Nutrition. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome.

Food And Agriculture Organization of the United Nations (FAO), 2019. "Key Facts on Food Loss and Waste You Should Know!" Food and Agriculture Organization of the United Nations, www.fao.org/save-food/resources/keyfindings/en/

Forum for Sustainable and Responsible Investment, 2016. <https://www.ussif.org/sribasics>

Fossil Free Funds, 2019. <https://fossilfreefunds.org/>

Francois Souchet, Ellen MacArthur Foundation. 2019. <https://www.ellenmacarthurfoundation.org/news/wearnext-make-fashion-circular-joins-forces-with-city-of-new-york-and-fashion-industry-to-tackle-clothing-waste>

Fraunhofer, INFRAS and IFEU, commissioned by the German Environmental Agency. Wirtschaftliche Aspekte nichttechnischer Maßnahmen zur Emissionsminderung im Verkehr ('Economic aspects of non-technical measures to reduce traffic emissions'). Retrieved on 25/07/18 from: www.umweltbundesamt.de/sites/default/files/medien/461/publikationen/texte_11_2013_frey_wirtschaftliche_aspekte_nichttechnischer_massnahmen_zur_emissionsminderung_im_verkehr1.pdf

Frye, A. 2013. Global Report on Human Settlements: Disabled and Older Persons and Sustainable Urban Mobility. UN Habitat Report. unhabitat.org/wp-content/uploads/2013/06/GRHS.2013.Thematic.Disabled.and_Older_Persons.pdf

Fujii, S., Gärling, T. and Kitamura, R., 2001. Changes in drivers' perceptions and use of public transport during a freeway closure: Effects of temporary structural change on cooperation in a real-life social dilemma. Environment and Behavior, 33(6), pp.796-808.

Fussler, C., Cramer, A. and Van der Vegt, S., 2017. Raising the bar: creating value with the UN Global Compact. Routledge. <https://www.taylorfrancis.com/books/9781351280914>

Gesualdi, F and Lucchetti, D (2017) The real cost of our shoes, Italy: Centro Nuovo Modello di Sviluppo and Fair, available at <http://labourbehindthelabel.net/wpcontent/uploads/2017/12/The-real-cost-of-our-shoes-REPORT-ENG-LOW.pdf>

Geyer, R., Jambeck, J., & Law, K., 2017. Production, use, and fate of all plastics ever made. Science Advances, 3(7), e1700782. doi:10.1126/sciadv.1700782

Giacovelli C., 2018. UNEP. Single-Use Plastics: A Roadmap for Sustainability, p.14 https://wedocs.unep.org/bitstream/handle/20.500.11822/25496/singleUsePlastic_sustainability.pdf?isAllowed=y&sequence=1

REFERENCES

Giddens, A., 1991. Structuration theory. Past, Present and Future. In: Bryant, C. and Jary, D.(eds.). Giddens' Theory of Structuration. A Critical Appreciation. London: Routledge.

Gidicsin, C.M., Maye, J.E., Locascio, J.J., Pepin, L.C., Philiossaint, M., Becker, J.A., Younger, A.P., Dekhtyar, M., Schultz, A.P., Amariglio, R.E. and Marshall, G.A., 2015. Cognitive activity relates to cognitive performance but not to Alzheimer disease biomarkers. *Neurology*, 85(1), pp.48-55.

Gifford, R.D. and Chen, A.K., 2017. Why aren't we taking action? Psychological barriers to climate-positive food choices. *Climatic change*, 140(2), pp.165-178.

Gifford, R., 2011. The dragons of inaction: psychological barriers that limit climate change mitigation and adaptation. *American Psychologist*, 66(4), p.290.

GIIN, 2018. Annual Impact Investor Survey. <https://thegiin.org/research/publication/annualsurvey2018>

Gilovich, T., Kumar, A. and Jampol, L., 2015. A wonderful life: Experiential consumption and the pursuit of happiness. *Journal of Consumer Psychology*, 25(1), pp.152-165.
<https://onlinelibrary.wiley.com/doi/abs/10.1016/j.jcps.2014.08.004>

Global Alliance for Clean Cookstoves. (6 April 2016). Alliance Launches 'Fumbalive' Cookstoves Campaign in Uganda. Available: <http://cleancookstoves.org/about/news/04-06-2016-alliance-launches-fumbalivecookstovescampaign-in-uganda.html>

GlobalData, 2017. Top Trends in Prepared Foods 2017: Exploring Trends in Meat, Fish and Seafood; Pasta, Noodles and Rice; Prepared Meals; Savory Deli Food; Soup; and Meat Substitutes.

Global Footprint Network, 2018. Data and Methodology.
<https://www.footprintnetwork.org/resources/data/>

Go Fossil Free, 2016. Full list of divestment commitments. <http://gofossilfree.org/commitments>

Goldstein, N.J., Cialdini, R.B. and Griskevicius, V., 2008. A room with a viewpoint: Using social norms to motivate environmental conservation in hotels. *Journal of consumer Research*, 35(3), pp.472-482.

Goodall, C., 2011. Peak Stuff": Did the UK reach a maximum use of material resources in the early part of the last decade. A research paper for Carbon Commentary, 13.
http://static.squarespace.com/static/545e40d0e4b054a6f8622bc9/t/54720c6ae4b06f326a8502f9/1416760426697/Peak_Stuff_17.10.11.pdf

Goodland, R. and Anhang, J., 2009 (cited in Livestock and climate change: What if the key actors in climate change are... cows, pigs, and chickens? *World Watch*, 22(6), pp.10-19.) and Steinfeld, H., Gerber, P., Wassenaar, T.D., Castel, V., Rosales, M., Rosales, M. and de Haan, C., 2006 (cited in Livestock's long shadow: environmental issues and options. Food & Agriculture Org.).

Gore, Extreme Carbon Inequality. Oxfam Media Briefing 2015.
<https://www.oxfam.org/en/research/extreme-carbon-inequality>

Gourmelon, G., 2015. Global plastic production rises, recycling lags. New Worldwatch Institute analysis explores trends in global plastic consumption and recycling. Recuperado de <http://www.worldwatch.org>.

Gove, Michael. 2019. UK Government Press Release. Government sets out plans to overhaul waste system. <https://www.gov.uk/government/news/government-sets-out-plans-to-overhaul-waste-system>

Government of British Columbia, 2018. Clean Energy Vehicle Program. Vehicle Incentive Program.
<https://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/transportation-energies/clean-transportation-policies-programs/clean-energy-vehicle-program/cev-for-bc>

Griffin, P. and Heede, C.R., 2017. The Carbon Majors Database. CDP Carbon Majors Report 2017.
<https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf?1499691240>

Griffin, Jo, 2010. The Lonely Society. The Mental Health Foundation.
<https://www.mentalhealth.org.uk/publications/the-lonely-society/>

Grubert, E., & Webber, M. (2017, December). Thirst for Power: Energy, Water and Human Survival.

GSMA Intelligence. 2019. Real Time Tracker. <https://www.gsmaintelligence.com>

Gunders, D., 2012. Wasted: How America is losing up to 40 percent of its food from farm to fork to landfill. Natural Resources Defense Council, 26.
http://www.indianasna.org/content/indianasna/documents/NRDC_Wasted_Food_Report.pdf

Gustavsson, J., Cederberg, C., Sonesson, U. and Otterdijk Rv, M.A., Global food losses and food waste. 2011. FAO: Rome (Italy). <http://www.fao.org/docrep/014/mb060e/mb060e00.htm>

REFERENCES

Hamer M, Chida Y. Active commuting and cardiovascular risk: a meta-analytic review. *Prev Med (Baltim)*. 2008;46:9–13. And Hamer M, Chida Y. Walking and primary prevention: a meta-analysis of prospective cohort studies. *Br J Sports Med*. 2008;42:

238–43. Retrieved from: Winters, M., Buehler, R. and Götschi, T., 2017. Policies to promote active travel: evidence from reviews of the literature. *Current environmental health reports*, 4(3), pp.278-285.

Harrell, C.; Bosshard, P., 2018. Insuring Coal no More: An Insurance Scorecard on Coal and Climate Change. <https://unfriendcoal.com/scorecard/>

Harrison, T., How to Divest Invest: A Guide for Institutional Investors 2018. Sainsbury Family Charitable Trust. https://www.divestinvest.org/wp-content/uploads/2018/02/DivestInvest_How_to_Guide_Feb_2018.pdf

Harwatt, H., Sabaté, J., Eshel, G., Soret, S. and Ripple, W., 2017. Substituting beans for beef as a contribution toward US climate change targets. *Climatic Change*, 143(1-2), pp.261-270. <https://link.springer.com/article/10.1007%2Fs10584-017-1969-1>

Hawken, P. ed., 2017. Drawdown: The most comprehensive plan ever proposed to reverse global warming. Penguin.

Hawkins, 2017, Drawdown, available online: <https://www.drawdown.org/solutions/food/farmland-restoration>

Hechter, M. and Opp, K.D. eds., 2001. Social norms. Russell Sage Foundation.

Hitam, M.B. and Borhan, H.B., 2012. FDI, growth and the environment: impact on quality of life in Malaysia. *Procedia-Social and Behavioral Sciences*, 50, pp.333-342.

H&M Conscious Foundation, 2016. <http://about.hm.com/en/media/news/global-change-award-2015.html>

Holt-Lunstad, J., 2010. Social Relationships and Mortality Risk: A Meta-analytic Review. Brigham Young University.

House of Commons - Environmental Audit Committee - Disposable Packaging: Coffee Cups, 2018. Publications.parliament.uk. <https://publications.parliament.uk/pa/cm201719/cmselect/cmenvau/657/65702.htm>

House of Commons - Environment, Food and Rural Affairs Committee - Written Evidence, 2018. Publications.parliament.uk. <https://publications.parliament.uk/pa/cm200910/cmselect/cmenvfru/230/230we08.htm>

Institute of Scrap Recycling Industries, 2017. 2017 U.S. Scrap Exports by Major Commodity. <https://www.isri.org/recycling-commodities/international-scrap-trade-database/2017-trade-flows>

Intergovernmental Panel on Climate Change

(IPCC), 2014. Climate Change Report. <https://www.ipcc.ch/report/ar5/wg3/>

International Energy Agency (IEA), 2018. World Energy Investment Report. <https://www.iea.org/wei2018/>

International Energy Agency and the United Nations, 2018. Global Status Report: Towards a zero-emission, efficient and resilient buildings and construction sector. https://wedocs.unep.org/bitstream/handle/20.500.11822/27140/Global_Status_2018.pdf?isAllowed=y&sequence=1

International Transport Forum, 2018a. Integrating Urban Public Transport Systems and Cycling. https://www.itf-oecd.org/sites/default/files/docs/integrating-urban-public-transport-systems-cycling-roundtable-summary_0.pdf

Inturri, G., Le Pira, M., Giuffrida, N., Ignaccolo, M., Pluchino, A., Rapisarda, A. and D'Angelo, R., 2019. Multi-agent simulation for planning and designing new shared mobility services. *Research in Transportation Economics*.

Jain, A and Gopalan, S (2017) In India, a legislative reform is needed to push corporate social responsibility, available at <https://theconversation.com/in-india-a-legislative-reform-is-needed-to-push-corporate-social-responsibility-80169>

Jan O., Tostivint C., Turbé A., O'Connor C., and Lavelle P., 2013. FAO. Food Wastage Footprint Impacts on Natural Resources, p. 22. <http://www.fao.org/docrep/018/i3347e/i3347e.pdf>

Janna Shadduck-Hernandez, ED.D., Marissa Nuncio, Zacil Pech, Mar Martinez, 2016. Dirty Threads, Dangerous Factories: Health and Safety in Los Angeles' Fashion Industry. UCLA Labor Center. <https://www.labor.ucla.edu/publication/dirty-threads-dangerous-factories-health-and-safety-in-los-angeles-fashion-industry/>

Jenkins, A., & Mostafa, T., 2015. The effects of learning on wellbeing for older adults in England. *Ageing and Society*, 35 (10), 2053-2070.

JP Morgan Chase, 2017. Investing in Opportunity. 2017 Corporate Responsibility Report. <https://reports.jpmorganchase.com/corporate-responsibility/2017/cr-2017-home.htm>

REFERENCES

- Jung, J. and Koo, Y., 2018. Analyzing the Effects of Car Sharing Services on the Reduction of Greenhouse Gas (GHG) Emissions. *Sustainability*, 10(2), p.539.
- Kanbur, R. and Shue, H., 2018. Climate Justice: Integrating Economics. *Climate Justice: Integrating Economics and Philosophy*, p.1.
- Karami, A., Golieskardi, A., Choo, C.K., Larat, V., Galloway, T.S. and Salamatinia, B., 2017. The presence of microplastics in commercial salts from different countries. *Scientific Reports*, 7, p.46173.
- Karpyn, A., Manon, M., Treuhaft, S., Giang, T., Harries, C. and McCoubrey, K., 2010. Policy solutions to the 'grocery gap'. *Health Affairs*, 29(3), pp.473-480.
- Kearney, J., 2010. Food consumption trends and drivers. *Philosophical transactions of the royal society B: biological sciences*, 365(1554), pp.2793-2807.
- Kendrovski, V., 2015. WHO. Health benefits of energy efficiency in urban environment. https://unfccc.int/sites/default/files/04_who_kendrovski.pdf
- Kharas, H., 2017. The unprecedented expansion of the global middle class: An update. Brookings Institute, Available online: https://www.brookings.edu/wp-content/uploads/2017/02/global_20170228_global-middle-class.pdf
- Killingsworth, M., "Want to be happier, stay in the moment", TED. 2012. https://www.ted.com/talks/matt_killingsworth_want_to_be_happier_stay_in_the_moment
- Killingsworth, M., Gilbert, D., "A wandering mind is an unhappy mind." *Science*. 2010. <http://science.sciencemag.org/content/330/6006/932/tab-figures-data>
- Kim, D. and Jang, S.S., 2014. Motivational drivers for status consumption: A study of Generation Y consumers. *International Journal of Hospitality Management*, 38, pp.39-47.
- Kim, J.S., Lee, H.J., Kim, S.K. and Kim, H.J., 2018. Global Pattern of Microplastics (MPs) in Commercial Food-Grade Salts: Sea Salt as an Indicator of Seawater MP Pollution. *Environmental science & technology*, 52(21), pp.12819-12828. <https://pubs.acs.org/doi/10.1021/acs.est.8b04180>
- Kollmuss, A. and Agyeman, J., 2002. Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior?. *Environmental education research*, 8(3), pp.239-260.
- Kraus, M. W., Piff, P. K., Mendoza-Denton, R., Rheinschmidt, M. L., & Keltner, D., 2012. Social class, solipsism, and contextualism: How the rich are different from the poor. *Psychological Review*, 119, 546–572. doi:10.1037/a0028756
- Kumar, A., Killingsworth, M. A., & Gilovich, T., 2014. Waiting for Merlot: Anticipatory Consumption of Experiential and Material Purchases. *Psychological Science*, 25(10), 1924–1931. <https://doi.org/10.1177/0956797614546556>
- Laal, M. 2012. Benefits of lifelong learning. *Procedia - Social and Behavioral Sciences*, 46, 4268-4272. doi:10.1016/J.SBSPRO.2012.06.239
- The Lancet Commission, 2019. The 21st-century great food transformation. [http://dx.doi.org/10.1016/S0140-6736\(18\)33179-9](http://dx.doi.org/10.1016/S0140-6736(18)33179-9)
- Lamb, N., 2018. Arjuna Capital. Gender Pay Scorecard. <http://arjuna-capital.com/wp-content/uploads/2018/04/GenderPayScorecard.pdf>
- Lane, C., 2016. Putting Pedestrians First in Healthy, Equitable, Environmental Cities. ITDP Magazine: Sustainable Transport No. 27. www.itdp.org/wp-content/uploads/2016/01/ST27_web.pdf
- Lasut, M.T., Weber, M., Pangalila, F., Rumampuk, N.D., Rimper, J.R., Warouw, V., Kaunang, S.T. and Lott, C., 2018. From Coral Triangle to Trash Triangle—How the Hot spot of Global Marine Biodiversity Is Threatened by Plastic Waste. In *Proceedings of the International Conference on Microplastic Pollution in the Mediterranean Sea* (pp. 107-113). Springer, Cham.
- Layard, R., 2011. *Happiness: Lessons from a new science*. Penguin UK.
- Lebreton, L., Slat, B., Ferrari, F., Sainte-Rose, B., Aitken, J., Marthouse, R., Hajbane, S., Cunsolo, S., Schwarz, A., Levivier, A. and Noble, K., 2018. Evidence that the Great Pacific Garbage Patch is rapidly accumulating plastic. *Scientific reports*, 8(1), p.4666.
- Lee, S., Lee, W.J. and Yoo, K.H., 2019. Millennial ride-share passengers' pro-sustainable behaviors: norm activation perspective. *Asia Pacific Journal of Tourism Research*, pp.1-12.
- Lee, J.C., Hall, D.L. and Wood, W., 2018. Experiential or Material Purchases? Social Class Determines Purchase Happiness. *Psychological science*, p.0956797617736386

REFERENCES

- Lenferna, A., 2018. Divest—Invest: A Moral Case for Fossil Fuel Divestment. *Climate Justice: Integrating Economics and Philosophy*, p.139.
https://books.google.com.co/books?hl=en&lr=&id=KflyDwAAQBAJ&oi=fnd&pg=PA139&dq=Divest&ots=E3u90Ss7pH&sig=vsIh_0ULfjOWzrB6zhhlYK9p7W0&redir_esc=y#v=onepage&q=Divest&f=false
- Lenzen, M., Sun, Y.-Y., Faturay, F., Ting, Y.-P., Geschke, A., & Malik, A., 2018. The carbon footprint of global tourism. *Nature Climate Change*, 8(6), 522–528. doi:10.1038/s41558-018-0141-x
- Lewis, C.S., 1956. Surprised by joy: The shape of my early life (Vol. 320). Houghton Mifflin Harcourt.
- Lin, D., Hanscom, L., Murthy, A., Galli, A., Evans, M., Neill, E., Mancini, M., Martindill, J., Medouar, F.Z., Huang, S. and Wackernagel, M., 2018. Ecological Footprint Accounting for Countries: Updates and Results of the National Footprint Accounts, 2012–2018. *Resources*, 7(3), p.58.
- Litman, T., 2007. TDM Encyclopedia, Victoria Transport Policy Institute www.vtpi.org/tdm/tdm12.htm
- Louv, R., 2011. The nature principle: human restoration and the end of nature-deficit disorder. Chapel Hill, N.C., Algonquin Books of Chapel Hill.
- Lund-Thomsen, P and Lindgreen, A (2014) Corporate social responsibility in global value chains: Where are we now and where are we going? *Journal of Business Ethics*, 123, pp 11- 22
- MacArthur, E., 2013. Towards the circular economy. *J. Ind. Ecol.* p. 9.
<https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf>
- MacArthur, E., 2013. Towards the circular economy. *J. Ind. Ecol.* pp.23-44.
<https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf>
- MacArthur, E., Zumwinkel, K. and Stuchtey, M.R., 2015. Growth within: a circular economy vision for a competitive Europe. Ellen MacArthur Foundation.
<https://www.ellenmacarthurfoundation.org/publications/growth-within-a-circular-economy-vision-for-a-competitive-europe>
- Martin, R., 2015. Visa Inc. How emerging market growth is changing tourism.
<https://www.weforum.org/agenda/2015/05/how-emerging-market-growth-is-changing-tourism/>
- Massink, R., Zuidgeest, M., Rijsburger, J., Sarmiento, O.L. and Van Maarseveen, M., 2011. The climate value of cycling. In *Natural Resources Forum*. V. 35. Wiley Online Library. 100–111.
onlinelibrary.wiley.com/doi/pdf/10.1111/j.1477-8947.2011.01345.x
- Maizlish, N., Woodcock, J., Co, S., Ostro, B., Fanai, A. and Fairley, D., 2013. Health co benefits and transportation-related reductions in greenhouse gas emissions in the San Francisco Bay area. *American journal of public health*, 103(4), pp.703–709.
- McDonald, S., Oates, C.J., Thyne, M., Timmis, A.J. and Carlile, C., 2015. Flying in the face of environmental concern: why green consumers continue to fly. *Journal of Marketing Management*, 31(13-14), pp.1503-1528.
- McGraw Hill Construction, 2014. Green Multifamily and Single Family Homes.
<https://www.wm.com/documents/Smart%20Market%20Report%20-%20Green%20Multifamily%20and%20Single%20Family%20Homes.pdf>
- McKibben, B., 2016. 360.org McKibben, B., 2008. Multiplication Saves the Day. *Orion*, 24.
- McMichael AJ, Powles JW, Butler CD, Uauy R. Food, livestock production, energy, climate change, and health. *Lancet* 2007; 370: 1253–63
- Mendiate, C. 2016. A spatial application of an opportunity costing methodology for the assessment of the climate value of cycling. *Procedia-Social and Behavioral Sciences*, 216: 518-534.
www.sciencedirect.com/science/article/pii/S187704281506190X/pdf
- Midgett, C., Bendickson, J.S., Muldoon, J. and Solomon, S.J., 2018. The sharing economy and sustainability: A case for Airbnb. *Small Business Institute Journal*, 13(2), pp.51-71.
- Ministry of Health, People's Republic of China, 2016.
<http://dg.cnsoc.org/article/04/8a2389fd54b964c80154c1d781d90197.html>
- Mitchell, D., Claris, S. and Edge, D., 2016. Human-centered mobility: A new approach to designing and improving our urban transport infrastructure. *Engineering*, 2(1), pp.33-36.
- Modi, Narendra. Prime Minister of India. World Environment Day, 2018. UNEP.
<http://worldenvironmentday.global/>
- Montalvo, C., Peck, D. and Rietveld, E., 2016. A longer lifetime for products: benefits for consumers and companies. Study for Internal Market and Consumer Protection (IMCO) Committee.
https://www.researchgate.net/publication/305043294_A_longer_lifetime_for_products_Benefits_for_consumers_and_companies

REFERENCES

Morris, E.A. and Guerra, E., 2015. Mood and mode: does how we travel affect how we feel?. Transportation, 42(1), pp.25-43. (data collected by United States Department of Labor, Bureau of Labor Statistics, drawing on the American Time Use Survey's well-being module, which surveyed over 13,000 respondents about mood during randomly selected activities. 2013. <https://www.bls.gov/tus/>).

Moscardo, G., 2017. Sustainable Luxury in Hotels and Resorts: Is It Possible?. In Sustainable management of luxury (pp. 163-189). Springer, Singapore.

MSCI, 2018. The MSCI World ESG Leaders Index. <https://www.msci.com/msci-esg-leaders-indexes>

Mthembu, B., Embankment, V. and Mutambara, E., 2018. Rural Tourism as a Mechanism for Poverty Alleviation in Kwa-Zulu-Natal Province of South Africa: Case of Bergville. https://www.ajhtl.com/uploads/7/1/6/3/7163688/article_58_vol_7_4_2018.pdf

Muncke, J., 2016. Food packaging materials. Packaging materials, 7(08), p.2017.

Nasr, S.B., 2019. New approach for a stable multi-criteria ridesharing system. arXiv preprint arXiv:1901.02510.

Nayomi, Geethika and Gnanapala Athula, 2015. Socio-Economic Impacts on Local Community through Tourism Development with Special Reference to Heritance Kandalama. file:///C:/Users/77/Downloads/283-997-1-PB.pdf

Neely, A., 2008. Exploring the financial consequences of the servitization of manufacturing. Operations management research, 1(2), pp.103-118.

Neo, P., 2008. Expert analysis: Meat and seafood consumption in Asia will rise 78% by 2050, Food Navigator Asia, available: <https://www.foodnavigator-asia.com/Article/2018/12/03/Expert-analysis-Meat-and-seafood-consumption-in-Asia-will-rise-78-by-2050>

Neves, A. and Brand, C., 2018. Assessing the potential for carbon emissions savings from replacing short car trips with walking and cycling using a mixed GPS-travel diary approach. Transportation Research Part A: Policy and Practice.

Ng, S. and Popkin, B., 2012. Time use and physical activity: a shift away from movement across the globe. Obesity Reviews. doi:10.1111/j.1467-789X.2011.00982.x. www.ncbi.nlm.nih.gov/pmc/articles/PMC3401184/pdf/nihms389131.pdf

Nielsen, 2015. Global Corporate Sustainability Report. <https://www.nielsen.com/content/dam/nielsen-global/dk/docs/global-sustainability-report-oct-2015.pdf>

NZTA, 2016. Benefits of investing in cycling in New Zealand communities. A report for the New Zealand Transport Agency. www.nzta.govt.nz/assets/Walking-Cycling-and-Public-Transport/docs/benefits-of-investing-in-cycling/cyclelife-benefits-booklet.pdf

NZTA, 2013. The walking and cycling model community story with New Plymouth & Hastings. A report for the New Zealand Transport Agency. www.nzta.govt.nz/assets/Walking-Cycling-and-Public-Transport/docs/model-community-story-spread.pdf

O'Dea, J., 2018. Electric vs. Diesel vs. Natural Gas: Which Bus is Best for the Climate? The Equation. Cambridge, MA: Union of Concerned Scientists. Blog, July 18. <https://blog.ucsusa.org/jimmyodea/electric-vs-diesel-vs-natural-gas-which-bus-is-best-for-the-climate>

OECD, 2017. Obesity Update. www.oecd.org/els/health-systems/Obesity-Update-2017.pdf

Office of Transportation and Air Quality (OTAQ). 2017. Fast facts: U.S. transportation sector greenhouse gas emissions 1990-2015. EPA-420-F-17-013. Washington, DC: US Environmental Protection Agency. <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P10057NK.pdf>

Orwell, G., 1958. The Road to Wigan Pier (1937).

Osterberg, P., and Radulovic, V. 2017. Electronics and the growing trend towards reuse and the circular economy. Sustainable Electronics Recycling International (SERI). <https://sustainableelectronics.org/news/2017/06/22/electronics-and-growing-trend-towards-reuse-and-circular-economy>

Palmer, K., Tate, J.E., Wadud, Z. and Nellthorpe, J., 2018. Total cost of ownership and market share for hybrid and electric vehicles in the UK, US and Japan. Applied energy, 209, pp.108-119.

Paris Climate Change Agreement, 2015. <https://sustainabledevelopment.un.org/frameworks/parisagreement>

Perry, P., Fernie, J. and Woods, S., 2018. The international fashion supply chain and corporate social responsibility. http://epubs.surrey.ac.uk/849196/1/_homes.surrey.ac.uk_home_System_Desktop_Exploring%20the%20International%20Fashion%20Supply%20Chain%20and%20CSR_Perry_Wood%20chapter%202019.pdf

REFERENCES

PG&E, 2019. Solar Choice and Regional Renewable Choice programs.

https://www.pge.com/en_US/residential/solar-and-vehicles/options/solar/solar-choice/solar-choice.page?WT.mc_id=Vanity_solarchoice

Piñera, Sebastian. President of Chile. <https://www.gob.cl/en/news/chaobolsasplasticas-law-banning-chilean-stores-providing-plastic-bags-begins-take-effect-today/>

Poore, J. and Nemecek, T., 2018. Reducing food's environmental impacts through producers and consumers. *Science*, 360(6392), pp.987-992. doi: [10.1126/science.aag0216](https://doi.org/10.1126/science.aag0216)

Prud'homme, B., & Raymond, L. (2016). Implementation of sustainable development practices in the hospitality industry: A case study of five Canadian hotels. *International Journal of Contemporary Hospitality Management*, 28(3), 609-639.

Pucher, J., Buehler, R., Bassett, D.R. and Dannenberg, A.L., 2010. Walking and cycling to health: a comparative analysis of city, state, and international data. *American journal of public health*, 100(10), pp.1986-1992. www.ncbi.nlm.nih.gov/pmc/articles/PMC2937005/pdf/1986.pdf

Remy, N., Speelman, E. and Swartz, S., 2016. Style that's sustainable: a new fast-fashion formula. McKinsey & Company, pp.1-6. <https://www.mckinsey.com/business-functions/sustainability/our-insights/style-thats-sustainable-a-new-fast-fashion-formula>

Reynolds, C., Winters, M., Ries, F. and Gouge, B., 2010. Active transportation in urban areas: exploring health benefits and risks. National Collaboration Centre for Environmental Health, 2010, p.2.

http://www.nccch.ca/sites/default/files/Active_Transportation_in_Urban_Areas_June_2010.pdf

Ritchie, H., Roser M., (2018) - "Meat and Seafood Production & Consumption". Published online at OurWorldInData.org. <https://ourworldindata.org/meat-and-seafood-production-consumption>

Rojas-Rueda, D., de Nazelle, A., Tainio, M. and Nieuwenhuijsen, M., 2011. The health risks and benefits of cycling in urban environments compared with car use: health impact assessment study. *BMJ*; 343:d4521. www.bmj.com/content/343/bmj.d4521.long

Rosi, A., Mena, P., Pellegrini, N., Turrone, S., Neviani, E., Ferrocino, I., Di Cagno, R., Ruini, L., Ciatì, R., Angelino, D. and Maddock, J., 2017. Environmental impact of omnivorous, ovo-lacto-vegetarian, and vegan diet. *Scientific Reports*, 7(1), p.6105. doi:[10.1038/s41598-017-06466-8](https://doi.org/10.1038/s41598-017-06466-8)

Sanzillo, Tom., Hipple, Kathy., Williams-Derry, Clark., 2018. The Financial Case for Fossil Fuel Divestment. Institute for Energy Economics and Financial Analysis. http://ieefa.org/wp-content/uploads/2018/07/Divestment-from-Fossil-Fuels_The-Financial-Case_July-2018.pdf

Saxbe, D.E. and Repetti, R., 2010. No place like home: Home tours correlate with daily patterns of mood and cortisol. *Personality and Social Psychology Bulletin*, 36(1), pp.71-81.

Scarborough, P., Appleby, P.N., Mizdrak, A. et al. *Climatic Change* (2014) 125: 179. <https://doi.org/10.1007/s10584-014-1169-1>

Schanes, K., Giljum, S., & Hertwich, E., 2016. Low carbon lifestyles: A framework to structure consumption strategies and options to reduce carbon footprints. *Journal Of Cleaner Production*, 139, 1033-1043. doi:[10.1016/j.jclepro.2016.08.154](https://doi.org/10.1016/j.jclepro.2016.08.154)

Schrank, D., Eisele, B., Lomax, T. and Bak, J., 2015. urban mobility scorecard. 2015. Texas A&M Transportation Institute and the Texas A&M University System.

Seattle Public Utilities, 2018. City of Seattle. <http://www.seattle.gov/util/forbusiness/solidwaste/foodyardbusinesses/commercial/foodpackagingrequirements/>

Sharp, V., Giorgi, S. and Wilson, D. C. (2010) 'Delivery and impact of household waste prevention intervention campaigns (at the local level)', *Waste Management & Research*, 28(3), pp. 256-268. doi: [10.1177/0734242X10361507](https://doi.org/10.1177/0734242X10361507).

Shepard, P., 1996. *The Only World We've Got*.

Shove, E., Pantzar, M. and Watson, M., 2012. *The dynamics of social practice: Everyday life and how it changes*. Sage.

Shaw, D., McMaster, R. and Newholm, T., 2016. Care and commitment in ethical consumption: An exploration of the 'attitude-behaviour gap'. *Journal of Business Ethics*, 136(2), pp.251-265.

Soga, M., Cox, D.T., Yamaura, Y., Gaston, K.J., Kurisu, K. and Hanaki, K., 2017. Health benefits of urban allotment gardening: improved physical and psychological well-being and social integration. *International journal of environmental research and public health*, 14(1), p.71.

Solar Nigeria Programme, "Solar Nigeria adds 170,000 solar homes in just 1 year" (16 February 2017). <http://www.solar-ng.com/2017/02/16/solar-nigeria-adds-170000-solar-homes-in-just-1-year/>.

REFERENCES

Solheim, Erik. former Executive Director of the United Nations Environment Programme (2016-2018). World Environment Day, 2018. UNEP. <http://worldenvironmentday.global/>

Sørensen, F., Bærenholdt, J.O. and Greve, K.A.G.M., 2018. Tourist Practices in the Circular Economy. In Transforming for Sustainability.

Standard Chartered, 2018. Asia Sustainable Investing Review. <https://av.sc.com/corp-en/content/docs/Asia-Sustainable-Investing-Review-2018.pdf>

Stephens, N. M., Fryberg, S. A., Markus, H. R., Johnson, C. S., & Covarrubias, R. (2012). Unseen disadvantage: How American universities' focus on independence undermines the academic performance of first-generation college students. *Journal of Personality and Social Psychology*, 102, 1178–1197. doi:10.1037/a0027143

Stenmarck, A., Jensen, C., Quedsted, T., Moates, G., Buksti, M., Cseh, B., Juul, S., Parry, A., Politano, A., Redlingshofer, B. and Scherhauser, S., 2016. Estimates of European food waste levels. IVL Swedish Environmental Research Institute. P.26-34. <https://www.eu-fusions.org/phocadownload/Publications/Estimates%20of%20European%20food%20waste%20levels.pdf>

Stockholm Environment Institute. 2018. Introduction to Offset Standards. <http://www.co2offsetresearch.org/consumer/Standards.html>

Sudbury-Riley, L. and Kohlbacher, F., 2016. Ethically minded consumer behavior: Scale review, development, and validation. *Journal of Business Research*, 69(8), pp.2697–2710.

Sustainable Development Goals, 2015. <https://sustainabledevelopment.un.org/frameworks/parisagreement>

Stahel, W.R., 2016. The circular economy. *Nature News*, 531(7595), p.435. <https://www.nature.com/news/the-circular-economy-1.19594>

Tamborini, C.R., Kim, C. and Sakamoto, A., 2015. Education and lifetime earnings in the United States. *Demography*, 52(4), pp.1383–1407. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4534330/>

The Taskforce on Sustainable Lifestyles, 2005. Swedish Ministry of Environment. <http://www.unep.fr/scp/marrakech/taskforces/pdf/SLT%20Report.pdf>

TED. "Dear TED: "How can I be happier at work?" 2018. <https://ideas.ted.com/dear-ted-how-can-i-be-happier-at-work/>

Tessum, C. W., Apte, J. S., Goodkind, A. L., Muller, N. Z., Mullins, K. A., Paoella, D. A., & Hill, J. D. 2019.. Inequity in consumption of goods and services adds to racial–ethnic disparities in air pollution exposure. *Proceedings of the National Academy of Sciences*. <https://www.pnas.org/content/early/2019/03/05/1818859116>

Thamotheram, R. The Fossil Fuel Divestment Debate: Is There a Consensus Way Forward? https://www.responsible-investor.com/home/article/rt_div/

Thøgersen, J. and Crompton, T., 2009. Simple and painless? The limitations of spillover in environmental campaigning. *Journal of Consumer Policy*, 32(2), pp.141–163.

Toolkit on Poverty Reduction through Tourism, 2011. International Labor Office (ILO).

Track Your Happiness. App. 2009-2015. Matt Killingsworth. <https://www.trackyourhappiness.org/>

Tremblay, M.S., Gray, C.E., Akinroye, K., Harrington, D.M., Katzmarzyk, P.T., Lambert, E.V., Liukkonen, J., Maddison, R., Ocansey, R.T., Onywera, V.O. and Prista, A., 2014. Physical activity of children: a global matrix of grades comparing 15 countries. *Journal of physical activity and health*, 11(s1), pp.S113–S125. journals.humankinetics.com/doi/pdf/10.1123/jpah.2014-0177

Tully, S. M., Hershfield, H. E., & Meyvis, T. (2015). Seeking lasting enjoyment with limited money: Financial constraints increase preference for material goods over experiences. *Journal of Consumer Research*, 42, 59–75. doi:10.1093/jcr/ucv007

Turner, M., 2016. Here is the letter the world's largest investor, BlackRock CEO Larry Fink, just sent to CEOs everywhere. *Business Insider*. <http://www.prism.com/wp-content/uploads/2016/02/BlackRock-CEO-Larry-Fink-letter-to-SandP-500-CEOs-Business-Insider.pdf>

UK Office for Low Emission Vehicles. 2018. Tax benefits for ultra low emission vehicles. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/709655/ultra-low-emission-vehicles-tax-benefits.pdf

United Nations, 2018. Data booklet. *The World's Cities in 2018*. http://www.un.org/en/events/citiesday/assets/pdf/the_worlds_cities_in_2018_data_booklet.pdf

United Nations Comtrade Database, 2018. <https://comtrade.un.org/>

REFERENCES

United Nations Conference on Trade and Development (UNCTAD), 2013. Sustainable tourism: Contribution to economic growth and sustainable development. Trade and Development Board Trade and Development Commission Expert Meeting on Tourism's Contribution to Sustainable Development. Geneva, 14–15 March 2013. https://unctad.org/meetings/en/sessionaldocuments/ciem5d2_en.pdf

UNCTAD, 2013. Trade and Environment Review 2013: Wake Up Before it is Too Late: Make Agriculture Truly Sustainable Now for Food Security in a Changing Climate. https://unctad.org/en/publicationslibrary/ditcted2012d3_en.pdf

United Nations Environment Assembly (UNEA-4), 11-15 March 2019, Nairobi, Kenya. Summary of the Fourth Session of the United Nations Environment Assembly. <http://enb.iisd.org/vol16/enb16153e.html>

UNEP, 2018. Single-use Plastics: A Roadmap for Sustainability, https://wedocs.unep.org/bitstream/handle/20.500.11822/25496/singleUsePlastic_sustainability.pdf?isAllowed=y&sequence=1

UNEP, 2017. "E Waste Comes in Many Forms." Clean Air. [trello.com/c/fK4QSAE1/15-e-waste](https://www.trello.com/c/fK4QSAE1/15-e-waste).

UNEP, 2017. Non-Motorized Transport: Sustainable strategy for achieving the sustainable development goals. http://wedocs.unep.org/bitstream/handle/20.500.11822/22498/Sustainable_strategy_for_achieving_SDGs.pdf?sequence=1&isAllowed=y

UNEP, 2017. Renewable Energy and Energy Efficiency in Developing Countries: Contributions to Reducing Global Emissions. https://wedocs.unep.org/bitstream/handle/20.500.11822/22149/1_Gigaton_Third%20Report_EN.pdf?sequence=1

UNEP, 2016. A Framework for Shaping Sustainable Lifestyles. <http://web.unep.org/ourplanet/october-2016/unep-publications/framework-shaping-sustainable-lifestyles>

UNEP, 2016. Global Outlook on Walking and Cycling. www.fiafoundation.org/media/404898/globaloutlookonwalkingandcycling.pdf

UNEP, 2010. ABC of SCP: Clarifying Concepts on Sustainable Consumption and Production. Paris: United Nations Environment Programme.

UN-Habitat 2013: Planning and Design for Sustainable Urban Mobility: global report on human settlements. <https://unhabitat.org/books/planning-and-design-for-sustainable-urban-mobility-global-report-on-human-settlements-2013/>

United Nations Oceans Conference, Pollution Factsheet, 2017. https://sustainabledevelopment.un.org/content/documents/Ocean_Factsheet_Pollution.pdf

United Nations Principles for Responsible Investment (UNPRI), 2018. Annual Report. https://www.unpri.org/Uploads/z/b/u/pri_ar2018_761642.pdf

UNPRI, 2016. Global Guide to Responsible Investment Regulation. <https://www.unpri.org/policy-and-regulation/global-guide-to-responsible-investment-regulation/207.article>

United Nations System Standing Committee on Nutrition, 2017. Sustainable Diets for Healthy People and a Healthy Planet. <https://www.unscn.org/uploads/web/news/document/Climate-Nutrition-Paper-EN-WEB.pdf>

United Nations University (UNU). 2015. Discarded Kitchen, Laundry, Bathroom Equipment Comprises Over Half of World E-waste. <https://unu.edu/media-relations/releases/discarded-kitchen-laundry-bathroom-equipment-comprises-over-half-of-world-e-waste-unu-report.html#info>

United Nations World Tourism Organization, United Nations Environment Programme, World Meteorological Organization (UNWTO-UNEP-WMO), 2008. Climate Change and Tourism: Responding to Global Challenges. UNWTO, Madrid.

United States Census Bureau. 2019. Population Clock. <https://www.census.gov/popclock/>

United States Department of Agriculture (DoA), 2018. Economic Research Service. Household food security in the United States in 2017. <https://www.ers.usda.gov/publications/pub-details/?pubid=90022>

US Department of Energy. Office of Energy Efficiency & Renewable Energy. <https://www.energy.gov/eere/why-energy-efficiency-upgrades>

Urban Mobility Scorecard, 2015. The Texas A&M Transportation Institute and Inrix. Inc.

US DoA, 2017. Census of Agriculture - US Factory Farming Estimates - Concentrated Animal Feeding Operations (CAFO). <https://www.nass.usda.gov/AgCensus/FAQ/2017/index.php>

REFERENCES

US DoA, 2010. Economic Research Service. Access to Affordable, Nutritious Food Is Limited in "Food Deserts" <https://www.ers.usda.gov/amber-waves/2010/march/access-to-affordable-nutritious-food-is-limited-in-food-deserts/>

US Department of Labor, 2014. Bureau of Labor Statistics. <https://www.bls.gov/>

US EPA, 2018. Basic Information About Electronics Stewardship. <https://www.epa.gov/smm-electronics/basic-information-about-electronics-stewardship#02>

US EPA, 2018. Electronics donation and recycling resources. <https://www.epa.gov/recycle/electronics-donation-and-recycling>

US EPA, 2018. Energy and Environment. Reduce the Environmental Impact of your Energy Use. <https://www.epa.gov/energy/reduce-environmental-impact-your-energy-use>

US EPA, 2018. Global Greenhouse Gas Emissions Data. <https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>

US EPA, 2016. Greenhouse Gas Emissions. Reducing Emissions from Homes and Businesses. <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

US EPA, 2016. Facts and figures about materials, waste and recycling. Textiles: material-specific data. <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/textiles-material-specific-data>

US EPA, 2016. Green Buildings. <https://archive.epa.gov/greenbuilding/web/html/whybuild.html>

US EPA, 2016. Sources of Greenhouse Gas Emissions. <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

US EPA, 2016. Sustainable Management of Food. Reduce Wasted Food By Feeding Hungry People. <https://www.epa.gov/sustainable-management-food/reduce-wasted-food-feeding-hungry-people>
Verplanken, & Roy., 2016. Empowering interventions to promote sustainable lifestyles: Testing the habit discontinuity hypothesis in a field experiment. Journal of Environmental Psychology, 45, pp.127-134.

US EPA, 2014. Municipal solid waste generation, recycling, and disposal in the United States: facts and figures for 2012. Washington, DC. http://www.epa.gov/osw/nonhaz/municipal/pubs/MSWcharacterization_508_053113_fs.pdf

US EPA, 2012. Extending the life of electronic equipment.

<https://www.epa.gov/sites/production/files/documents/extend.pdf> Waste Resources Action Programme (WRAP). 2012. Valuing Our Clothes. http://www.wrap.org.uk/sites/files/wrap/VoC%20FINAL%20online%202012%2007%2011.pdf?fbclid=IwAR08s_SKGGiATb-Vb14d88z_aMx4EE_OIWEHL6Q0SrqsctNaMxC_JaEbrqs

US EPA, 1991. Diaper Industry

United States Sustainable Investment Forum (US SIF Foundation), 2014. Report on US sustainable, responsible and impact investing trends 2018. <https://www.ussif.org/files/Trends/Trends%202018%20executive%20summary%20FINAL.pdf>

Van Haastert, M., & de Grosbois, D. (2010). Environmental initiatives in bed and breakfast establishments in Canada: Scope and major challenges with implementation. Tourism and Hospitality Planning & Development, 7(2), 179-193.

Van Cauwenberghe, L. and Janssen, C.R., 2014. Microplastics in bivalves cultured for human consumption. Environmental pollution, 193, pp.65-70.

Vardhan, Harsh. Environment Minister of India. World Environment Day, 2018. UNEP. <http://worldenvironmentday.global/>

Ventour, L., 2008. The food we waste. Wrap. <http://www.lefigaro.fr/assets/pdf/Etude%20gaspillage%20alimentaire%20UK2008.pdf>

Verplanken, & Roy., 2016. Empowering interventions to promote sustainable lifestyles: Testing the habit discontinuity hypothesis in a field experiment. Journal of Environmental Psychology, 45, pp.127-134.

Verplanken, B., 2012. Old habits and new routes to sustainable behaviour. In *Engaging the public with climate change* (pp. 43-56). Routledge.

Victoria Transport Policy Institute (VTPI), 2010. Nonmotorized Transportation Planning. Identifying Ways to Improve Pedestrian and Bicycle Transport. TDM Encyclopedia, <http://www.vtpi.org/tdm/tdm25.htm>

Wallman, J., 2015. Stuffocation: why we've had enough of stuff and need experience more than ever. Spiegel & Grau.

REFERENCES

Webster, K., 2017. The circular economy: A wealth of flows. Ellen MacArthur Foundation Publishing.

Weidman, A. C., & Dunn, E. W. (2016). The unsung benefits of material things: Material purchases provide more frequent momentary happiness than experiential purchases. *Social Psychological & Personality*

Wetengere, K.K., 2018. Is the banning of importation of second-hand clothes and shoes a panacea to industrialization in east Africa?. *African Journal of Economic Review*, 6(1), pp.119-141.

Wijkman, A. and Skånberg, K., 2015. The circular economy and benefits for society. Club of Rome.

The World Bank, 2018. The Sustainable Cities Series. For thriving cities, people vs. nature is a false choice. <http://blogs.worldbank.org/sustainablecities/thriving-cities-people-vs-nature-false-choice>

The World Bank, 2011. "The State of the Poor: Where are the Poor and Where are they Poorest?" http://www.worldbank.org/content/dam/Worldbank/document/State_of_the_poor_paper_April17.pdf

World Green Business Council, 2013. The Business Case for Green Building. https://www.worldgbc.org/sites/default/files/Business_Case_For_Green_Building_Report_WEB_2013-04-11-2.pdf

World Health Organization, 2016b. Preventing disease through healthy environments: a global assessment of the burden of disease from environmental risks. apps.who.int/iris/bitstream/10665/204585/1/9789241565196_eng.pdf

WHO, 2015a. Global status report on road safety. apps.who.int/iris/bitstream/10665/189242/1/9789241565066_eng.pdf

WHO, 2015b. Health in 2015: from MDGs to SDGs. apps.who.int/iris/bitstream/10665/200009/1/9789241565110_eng.pdf

WHO/FAO/UNU, 2007. Expert Consultation. Protein and amino acid requirements in human nutrition. 935: 1-265.

World Road Association, 2015. Road safety manual: a manual for practitioners and decision makers on implementing safe system infrastructure. <roadsafety.piarc.org/en>

WTO Committee on Import Licensing, 2017. https://www.wto.org/english/news_e/news17_e/impl_03oct17_e.htm

World Travel and Tourism Council, 2017. Travel & Tourism World Economic Impact, 2017. <https://www.wttc.org/-/media/files/reports/economic-impact-research/regions-2017/world2017.pdf>

World Travel and Tourism Council, 2015. Travel & Tourism Economic Impact, Maldives. <https://www.wttc.org/-/media/files/reports/economic%20impact%20research/countries%202015/maldives2015.pdf>

Worldwide Responsible Accredited Production (WRAP), 2017. Information Sheet. Updating Guidance to Food Businesses on the Application of Date Marks and Related Advice. http://www.wrap.org.uk/sites/files/wrap/Briefing_note_Updated_guidance_to%20industry_on_date_and_related_labelling.pdf

Wright, S.L. and Kelly, F.J., 2017. Plastic and human health: a micro issue?. *Environmental science & technology*, 51(12), pp.6634-6647. <https://pubs.acs.org/doi/abs/10.1021/acs.est.7b00423>

WWF, 2018. Living Planet Report - 2018: Aiming Higher. Grooten, M. and Almond, R.E.A.(Eds). WWF, Gland, Switzerland.

Zvolska, L. (2015). Sustainability potentials of the sharing economy: The case of accommodation sharing platforms (Master's thesis). Retrieved from IIIIE Database.