

What might a sustainable future look like and how do we get there?

Friday, 10 September 2021 | Chatham House
Introduction

Time is running out to address the current climate crisis – those who are at the core of the problem are not truly seeking a solution, the governance structures needed to address it are often not sufficient, and policy responses to-date have not kept pace with the speed and scale of the challenge. Additionally, in the past years, the debate around sustainability has been polarized. While governments and institutions are taking steps in the right direction with new initiatives and partnerships, they are failing to take more significant steps needed to combat climate change. As the sustainability challenge cuts across a wide range of sectors, new and ground-breaking ideas are needed.

To enable idea generation, on Friday, 10th September, The Chatham House Sustainability Accelerator hosted its first annual [UnConference](#). A one-day event bringing together more than 50 thinkers from a wide range of backgrounds to discuss challenges and solutions to a sustainable future in a self-selecting participatory manner based mostly on Open Space facilitation methods.



In Open Space events, participants manage their own agenda of parallel working sessions around a central theme. It is an innovative conference format with thinkers and doers from across different sectors, finance, energy, business, built environment, science, history (just to name a few), together on sustainability challenges. The Sustainability Accelerator Unconference harnessed the collective power of all of its participants to bring new ideas to the discussion on how to reach a sustainable future.

'This type of gathering represents everything that we are working towards' says Ana Yang, Executive Director of the Chatham House Sustainability Accelerator in her recent [blog post](#).

Learnings, values, and outcomes of this UnConference are summarized in this report (publicly available), while they also:

- Enabled cross-silo networking
- Learnings for participants on innovation in the conference format
- New ideas on sustainability
- Cross-fertilization from various type of thinkers who do not get to meet
- Experimentation of new conference format that policy world could learn from

The following sections of this report contain:

- A full list of all the sessions that were proposed from participants
- Detailed notes that participants shared after the conference

Please note that the notes from participants have not been altered or edited by the Chatham House team in keeping with the UnConference ethos. The opinions expressed in these notes are not those of the Chatham House Sustainability Accelerator or Chatham House.

Many thanks to all our collaborators and supporters

The Chatham House Sustainability Accelerator would like to thank all the people that made our event possible. Thanks to our Associate Fellow, [Ben Yeoh](#), for catalysing the idea and providing the energy to make this event possible, the [Improbable](#) team, who facilitated this event, the graphic illustrators Tem Gunawardena and Beatrice Baumgartner.

Full list of session titles

- What future do we want?
- Does/why COP matters(s)
- How can business directly help communities everywhere with the just transition?
- Government as CRO (Chief Risk Officer). Let's discuss
- Improving waste management globally (5-15% GHG)
- Can progress be disaggregated from growth?
- Is there enough world for all the solutions that need land to happen at the same time?
- If we can't work out how to build stuff for zero emissions, what will we do?
- How do we make social impact business models successful at scale?
- When will ESG be a redundant investment term (success!)?
- How do we accelerate innovation in sustainable food? E.g. plant-based meat
- How can capital markets acknowledge the positive and negative impacts of investment?
- Why doesn't my mum/friend/neighbour understand?
- Justice (+values)
- What is regenerative security?
- What have been (un)successful sustainability/social movements and why?
- Defining what 'growth' is sustainable for people and planet
- How can we make breakthroughs in funding a sustainable ocean?
- How can investors improve their stewardship?
- The root cause of climate and society inequity
- How can business education be part of the solution towards a sustainable future, instead of the problem?
- How do low carbon energy sources fight? Why are we not using our resources strategically?
- Is the future circular? How do we shift from the linear to a circular system?
- How can we make nappies sustainable?
- Why are we going to fail at achieving a sustainable future?
- Can video games save the world? Using play to let kids build their own sustainable future?
- The environmental crisis will get worse. What does that mean for our strategies to realise a sustainable future?
- The how: Luca Paccioli for today's economy
- Is arguing helpful when there isn't a right answer? Why/so what?
- How can we help individuals and communities to understand and adopt net-zero lifestyles? E.g. social peer pressure
- Do we/people understand the social impacts of JT and what can we do about it?
- Is this a political economy question? What's the best political theory of change?
- How can we make risk and uncertainty a positive thing?

- Let's talk about a sustainable future for the global south
- How can/do/should we make collective global decisions?
- What does an interplanetary future look like and is that sustainable?
- What are the most important things to focus on (prioritisation)?
- Doughnut economics! How can we put it into practice?
- What are the limits to sustaining a rapidly growing global population?
- What young people can do in this just transition?

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Notes

Is there enough world for all the solutions that need land to happen at the same time?

Some steps to address the question:

1. What are the proposed 'solutions' that need land?
2. What kind of land, and how much do they need to be implemented at the proposed scale?
3. How much land of the right kind is potentially available?
4. How might one prioritise between land use options?

Before trying to answer the question ourselves, what sources of information/ studies have looked at this question already – is there an organisation/ process that already focusses on this question? Is there a broadly recognised report/ study has already answered the question? The group wasn't aware of a report looking specifically at this issue at a global level and across a range of sectors/ solutions, but a number of other reports were mentioned and are noted below.

1. What are the solutions that need land?

A number of touted solutions mentioned. Noting that some of these are not exclusively GHG solutions.

- Replacing steel in buildings with wood (land to grow wood/ plantations)
- using bio charcoal to replace metallurgical coal for steelmaking (land to grow wood/ plantations)
- Bio char to capture carbon/ improve soil health (land to grow fast-growing crops/ trees)
- solar power farms: land for panels
- Wind energy: land for turbines (can be offshore, though more expensive)
- Rewilding (not exclusively GHG)
- Protected areas (not exclusively GHG)
- More extensive farming systems (not exclusively GHG)
- Offsetting emissions from flying, residual offsetting of other activities to achieve 'net zero' rather than absolute zero
- Biofuel for energy

2. What kind of land, and how much do they need to be implemented at the proposed scale?

This question is not explored in any detail. Noted that allocation of land is not the end of the story: e.g. planting trees is a starting point, but doesn't tell you whether the trees will be burnt, or fail, or what they will be used for (e.g. short/long term locking up of carbon)

- Potential to combine some uses, e.g. planting on roofs, agroforestry
- Some land uses, e.g. solar, wind do not require the same land as e.g. forestry/ plantations
- Solar can be built on otherwise unproductive land, deserts
- Wind can be located on otherwise unproductive land, or offshore

3. How much land of the right kind is potentially available?

- 50% (?) of land surface used for agricultural production
- 0.4% (?) for mining
- 1% (?) cities (will this increase with population?)
- Will climate change reduce availability of appropriate land (flooding, water, temperature)?
- If land is earmarked for offsetting, is this compatible with the proposed 'solution'.
- If land is earmarked for biodiversity/ protection is this compatible with the proposed 'solution' - IPCC estimated that land is capable of capturing 1,000 Gt CO₂/yr, but this is reduced to 100 GtCO₂/yr if you adjust for need to protect biodiversity

- Land area for agriculture contingent on assumptions about diet, e.g. meat consumption, and changes in diet over time; population increase
 - NB: a few papers on land available for forestry:
 - Action Aid paper, 'Not Zero: how 'net zero' targets disguise climate inaction
4. How would one prioritise between land use options
- Consider a land budget, analogous to a carbon budget. Need to 'bid' for most effective carbon solutions, and prioritise accordingly. Consider an entity like the IEA for energy, but looking at modelling of 'land budgets' and identifying conflicts/ trade-offs in models.
 - University of Oxford [Food, Agriculture, Biodiversity, Land-Use, and Energy \(FABLE\) Consortium](#), is modelling land use in context of nationally determined contributions (NDCs).

Is arguing helpful when there isn't a right answer?

It says on the walls of Chatham House:

“The best way of arriving at the solution to any problem is for the protagonists of rival views to meet one another and talk things out with sincerity and candour”

Mahatma Gandhi, 1951

The question is borne of a frustration of too much chat and not enough action on the path to sustainability.

In discussion, this was explored and expressed in two forms:

1. That a sense of achievement can be attained solely by winning an argument. Our education prizes a strong, irrefutable, intellectual rationale rather than making real progress towards the end goal.
2. That we may spend a lot of time and energy on the things we disagree about when we largely agree with each other. The time for argument about the big issue is over and climate change deniers are in the minority. When we do not have Gandhi's "rival views" together, we can spend too much talking about things which matter less, "sucking the energy and air from the room".

The cultural and social influences which promote argument were explored and various ways of analysing preferences discussed. Public school debating, two-party politics and the role of opposition, challenge in the boardroom all reinforce the importance of disagreement and expressing alternative views in Anglo-Saxon culture. However, the theatre and ego of the protagonists can overtake the purpose of the debate, especially when they are too busy formulating their next argument to truly listen to the rival protagonist.

It was agreed that argument and debate can be helpful but focusing not on those who are entrenched in an "anti" camp may not be worthwhile. Instead, devoting energy to those who are undecided is likely to be more helpful in making progress. Argument may not be the right style of conversation to help them understand the issues and what they can do.

While the culture of debate and argument is not universal, the presence of testosterone perhaps means that some form of "winning" is inevitable and desirable. It is likely that we need to reframe what winning looks like, in terms of prizing the inclusion of differing views and taking consensual action. This may involve listening to the questions which others have, and answering them with a helpful attitude. This will mean that they can act in confidence and we all learn.

Gandhi's "talk things out" is different from "arguing": it is important not to pit only two "rival views" against each other as a theatrical event. And, to make progress it is vital to keep his attitude of "sincerity and candour" and, above all, purpose towards the end goal.

Let's talk about a sustainable future for the global south

Summary of discussion:

- What the global south needs most is to be able to take ownership of determining its own future.
- Several countries in the global south, however, do not have the power to influence global decisions that impact them. The impact of these decisions can be significant and often perpetuate a cycle where low-income countries in the global south are constantly playing catch up.
- Rather than relying on the benevolence of global powers, global powers need to acknowledge that there are structural issues that make it difficult for the global south to exercise ownership. Tilting the power dynamic to favour the global south in decision making is what's most needed.
- What would it take for global players to relinquish their powers? A couple of suggestions:
 - o Leveraging regional blocs to exercise power in e.g. The African Union becoming a member of the G20
 - o Leveraging individual influence in multilateral organisations (e.g., Ngozi Okonjo-Iweala as Director General of the World Trade Organisation) to bring issues relating to the global south on the global agenda
 - o Leveraging influential civil society and the media organisations across the global North as allies
- Leveraging global forums on various issues (e.g., COP26 for climate change, biodiversity COP etc.) to hold wealthy nations accountable and ensure follow through on commitments i.e., coming up with specific asks and measuring impact year in/out.
- What does the rest of the world need to learn from the global south and how do we create room for this to flourish?

Other issues/ideas to consider:

- Lack of clear/strong leadership to drive developmental agenda at the national/regional level. How do you go about creating a strong national/regional agenda?
- What developmental models could the global south adopt to accelerate development? China? What's a uniquely
- Rebel Ideas: The Power of Diverse Thinking (Book)

What does an interplanetary future look like and is that sustainable?

Summary of discussion:

- Humans will very likely be an interplanetary species. The point of space exploration should, however, not be to escape issues on earth. Outer space is still currently a theoretical backup plan, and we need to do what we can to protect the earth.
- If we have the technology to build cities on the moon, we have the technology to stop climate change
- Humans are explorers and space exploration is important to advance the human race, advance our technologies and to discover new things. What could we find? (Good/bad?)
- There are risks to space exploration that we need to keep in mind. While it is impossible to make accurate predictions, using history of industrialisation over the past 500 years as a guide, we expect that it's likely that:
 - o Humans will form rogue colonies and those wars are likely to happen, but things will even out over a long timescale and civilisation will be better for it
 - o Space exploration will be driven by companies rather than countries
 - o Space exploration will be AI/robot driven instead of human driven
 - o Interplanetary trade will be a thing and unlock significant opportunities
- There are a couple of questions we could ask to minimise these risks:
 - o Who gets to decide how we explore new planets? Billionaire innovators currently have the resources, but we need to be asking for clear proposals on what they want to do and to what end
 - o How do we preserve biodiversity and the entire ecosystem?
 - o Who owns what we find?
 - o What else have we learnt in the past 500 years that we should incorporate into our designs? (e.g., how do we prevent interplanetary slave trade?)
- Also helpful to look at books by futurists on interplanetary travel (e.g. Aurora by Kim Stanley Robinson)

How to get the capital markets to acknowledge positive and negative impacts on investments

No investment is without some positive and some negative impact. Different stakeholders are impacted differently, and investors are no exception. The struggle that we face in present day capital markets (and perhaps always) is that companies are incentivised to focus on the positive impacts of their business models, product and services and are disincentivised to report on the negative impacts. Yet, if we are to attain the sustainable future that “sustainability” and “ESG” has been created to do, we need to accelerate the path to transparency, and this requires complete and full disclosure on positive and negative implications of an investment decision.

The benefits of greater transparency are many:

- investors can allocate capital to transition companies away from negative impacts (to the extent that such negative externalities can be mitigated).
- Problems are solutions waiting to be found and some negative impacts are opportunities for innovation, which in turn represents an opportunity for investment and financial return
- Industry playing fields are levelled as impacts (positive and negative) are exposed enabling companies to compete on how their business model is best positioned to capitalise on the positive impacts they can generate
- Companies increase their integrity through greater acknowledgement of the inherent negative impacts of their products/services and can devise and communicate strategies to mitigate these impacts where appropriate
- Society gains greater appreciation of the circularity which exists in business, resourcing, consumption, and waste. Every action has a consequence, which in turn can lead to further action. This is paramount to tackling a truly sustainable future.

So how do we get greater disclosure of these positive and negative impacts? Applying the collective intellectual strength of a subset of participants at the Chatham House Sustainability Accelerator Unconference held on 10th September 2021, we determined three mechanisms:

1. Use of public policy
2. Asset owner engagement
3. Macro stewardship

Use of public policy

“Impacts” are synonymous with societal outcomes and one can argue that the role of government is squarely focused on achieving suitable societal outcomes to enable us to achieve a sustainable future. Capital allocation decisions of project investment are clearly anchored to the achievement of a positive Net Present Value, which is in turn anchored on the premise of achieving a return on investment in excess of a “risk free” rate of return plus a premium. If we are to drive forward the disclosure of “impact” within investment decisions, then we must change the rules of risk and update the definition of “risk free” rate to include societal outcomes.

Asset owner engagement

Asset owners are the quintessential influential investor and base investment decisions on a robust analysis of risk vs return. These investors are uniquely positioned to incorporate a new view of risk, and more recently, some pension schemes are beginning to espouse the concept of “Beta as a choice” in their target return profile. In other words, what is the return that is sufficient to achieve the financial outcomes we require whilst acknowledging that risk levels are appropriately factoring in the necessary societal outcomes.

Asset owner are also well positioned to actively engagement with investee companies to push for greater transparency of a business/sectors positive and negative impacts. In fact, it is now almost uniformly agreed that it clearly falls within the fiduciary duty of a trustee to identify, consider, and act upon the risks that are material to the ability of an investment portfolio to achieve its objectives. What is perhaps still somewhat controversial is whether the scope of the asset owner should extend to actively engaging with governments on behalf of its stakeholders. In other words, should the

directionality of asset owners' engagement efforts switch from going more granular into sectoral and company/holding level engagement and instead refocus more broadly to influencing government / macro level policy designed to effectuate broader brushed change. The answer is probably a mix of the two and many responsible asset owners are sharing their views with other asset owners. As is often the case in many industries, once a small number of actors start to change or exhibit new behaviours, others/the pack will soon follow.

Macro stewardship

Asset owners often form collectives and align themselves to industry led initiatives to champion broader levels of support, and this mechanism is critical to helping to influence and change public policy and fuller more balanced disclosure. Scaling these efforts even further, macro level stewardship at government level is critical to driving forward exposure of the impacts that investment brings. Groups such as the IGCC are one example of macro level stewardship and whilst more are needed, we need to be mindful of the potential dilution of hearing the message when too many voices are speaking simultaneously.

Conclusion

And yet we are running out of time....so we need to listen better, implement faster, and monitor more closely. If there is a metaphorical silver lining to the covid pandemic, it is that we have precisely had a jolt that has required us to exercise the skills of listening, acting, and monitoring. Collectivism is a powerful tool, yet we are fighting a challenging battle. Somewhere along the path of history, we defined the value of currency and moved our view that the only metric that matters is money. There remains a significant challenge and that is to reinsert a "social currency" into decision making. Incentives to the actors of every capital spend need to be clearly defined. This includes both public and private spend and gaps between the two, including the way in which such incentives exist in both models is paramount.

It all boils down to "accountability". Is it there? Yes, but (in the words of one participant quoting a former colleague) we ALL own this problem, and the time has come to solve it.

Why are we going to fail at achieving a sustainable future?

Achieving a sustainable future is a near impossible objective to measure in terms of success or failure. In some sense it is almost binary... if we achieve it then future generations will be around to read this article. If we fail, then reading this article will be the least of our worries and in its extreme, there will be no one left to worry. Therefore, we have a daunting objective in front of us and if we want to have any hope of succeeding then we need to be crystal clear as to what can cause us to fail.

The objective of this question, which was deliberated on at the Sustainability Accelerator Unconference at Chatham House, London on 10th September 2021 by a subset of attendees, was to articulate precisely why we cannot fail and to compile a list of reasons why we WILL fail if we do not watch out for these behaviours. In some respects, it is akin to Sun Tzu's infamously quoted expression of "Keep your friends close and your enemies closer." Once we downloaded the plethora of reasons why we may well fail at achieving a sustainable future, we explored covid including what we learned about ourselves as well as some mistakes that we must avoid / be cognisant of going forward. Finally, we explored some of the levers at our disposal to help steer us clear of these potential paths of failure, which levers could well break down in the event of a disorderly transition toward the future and which levers remain resilient and key. So here we go!

We are at serious risk of failing to achieve a sustainable future if we are not cognisant and acutely aware of the following:

- We are part of a machine premised on not being sustainable – both in design and inertia – think “J” curve
- It feels like work
- There is a significant mismatch between short term political objectives vs. the long-term problems we face
- Incentivisation (in all its applications) are too narrowly focused and short term oriented
- The systems in which we operate (education, political, economic, etc.) are inadequate and fail to draw sufficient attention to the enormity of the issue, urgency in which it needs to be addressed, scale of resources required, and knowledge/skills required to succeed
- Agency failure – the actors that support us on behalf of society fail
- Poor business practices
- We are locked into a “race to the bottom”
- Divisive power and ego at all levels – government, business, individual
- Human nature – we have not evolved sufficiently to acknowledge our finiteness
- Failed macro-mechanisms including industry strategy and regulation
- Too much emphasis on capitalism
- Failure in our ability to successfully redesign the system
- Actions taken are too little and too late
- Lack of our ability to coordinate and adopt a system thinking mindset
- Ignorance of the interconnectedness of the planet

Surely, the covid pandemic has provided us with many insights about ourselves as well as mistakes that hindsight is all too keen to highlight. Some of these insights/mistakes include:

- Collective crisis response – there is power in the collective
- In terms of distress, which voice do we listen to? Who is that voice for a sustainable future?
- There is an ever-inert challenge of balancing the individual vs the collective. How do we make these choices, who makes them and how will our inability to make them impact us more broadly?
- Willingness to step up and take ownership – some demonstrated it but did enough of us do enough?

- Can't delay on response – can we afford to wait given the existential nature of a slower moving existential risk.
- Reticence to deploy capital until it is too late.

So, what have we *really* learned:

- We can't win them all – there are trade offs
- We cannot ignore the science
- We need to identify the influencers in society and use them positively to effectuate change
- We cannot wait too long to act
- We need to acknowledge that tolerance for action is low – combatting the inertia of inactiveness is paramount to an effective strategy
- There will always be uncertainty of outcomes and we need to remain agile
- Valuation i.e. cost / benefit will always be a consideration
- Can we start to factor into financial accounting the recognition of investments in our future as balance sheet asset items rather than sunk costs/ short term expenditure
- We need to be aware of symptom distraction and focus on root cause

So, how do we tackle these challenges, learn from our experiences, and implement a successful game plan where the trophy at the end of the tournament is the preservation of a suitable future for the coming generations? We have several levers at our disposal:

1. Law
2. Policing / civil society
3. Advocacy / voluntary and institutional
4. Regulation
5. Central banks e.g. monetary policy
6. International cooperation e.g. trade barriers/sanctions
7. Technology
8. Storytelling (the power of conveying 'hope')
9. Ethics
10. Belief systems

The effectiveness of the levers is somewhat predicated on the orderliness of the transition toward our future. As history has shown, many of the above levers are susceptible to deterioration and/or complete ineffectiveness in times of immediate stress i.e. a disorderly transition. As the severity and velocity of change arises, there may well be failure in the first six levers as individuals seek salvation in technology, those that can give them hope, their ethic views and their belief systems. This is undoubtedly a non-exhaustive list. We need to have effective and durable levers at our disposal. Failing to learn from the past, implement what we know we should do and ultimately portraying the self-destructive behaviours set out herein will most surely lead to the exact opposite of our sustainable future goal. It's time to act to avoid and combat all that we cannot do with that which we can.

How should we prioritise what we focus on?

Summary

This question was intended to address the hierarchy of issues and industries that are likely to have the most impact in mitigating climate change. While there was no clear emergence of an industry to focus on as the highest order priority, there was a clear theme which emerged around the critical role of government. In the dynamics between investors-industry-government, the group saw the role of

policy makers as central. The second theme was around risk, and how important it is that we focus on risk and what risk governments are taking on.

Notes

We need to refocus on risk, and what was referred to as 'risk-enomics'. Risk has implications for the financial markets as well as to society. As we reach climate tipping points, these calculations will be increasingly important for governments to make decisions regarding how to plan. Everyone needs to consider longer term decisions, investors included, when thinking about risk. We should be looking at sustainability in a 'balance sheet' sort of way. There is currently little consideration for the fact that there is a cap on natural resources. We need to throw out traditional economics and reconsider what we value as a society. This involves making risk central to the discussion. We need to consider how effective the government and private sector are as risk allocators and improve upon this.

In the asset management and pension fund space, implications of investments should be looked 25+ years into the future. There was an acknowledgement of the important roles that asset managers, pension funds, and insurance/reinsurance play in how businesses operate. Macro-stewardship and the need for a stable, predictable policy environment is important. The example of Spain's retroactive subsidy cuts to the solar industry was highlighted as an unpredictable government action. Public private partnerships are a useful mechanism for achieving goals and could be an increasingly useful tool.

While no clear industry was identified as the main priority. However, those referenced were clean energy, transport and built environment. It was also highlighted that we should focus on production rather than consumption, when looking to reduce emissions. There should be no new coal installed globally, as cleaner solutions exist and 2030 targets are, in some cases, being used as a delay tactic.

There was also some discussion regarding incentives and how to use policy to influence behaviour. Within the realm of behaviour was an acknowledgement that human beings are obsessed with innovation and that we need to consider the consequences of innovation, taking risk into consideration, when doing so. Capitalism does not always support innovation correctly.

Everyone must not let non-climate related issues serve as distractions, as the importance of making progress on climate change in the near term is a first order priority. Other issues will slow us down and take up time that we do not have. One example was the current focus on space travel.

We need to continue to work on common languages and frameworks for communicating across industries. Good governance is also important. There needs to be global coordination of knowledge sharing. Before global coordination, each government needs to have the best information available regarding activities in their country. For example, in China, the government has the best data and this has to do with required disclosure. We need more disclosure in the West of cradle to gate and for this information to be publicly available. We should provide whatever support we can to policy makers, including the best quality data and information. This will enable increasingly well considered decisions.

Government as CRO (Chief Risk Officer) – Lets' Discuss

- The Convener had written a 3-page piece on the topic earlier in the year, and was looking to source perspectives (and validate the notion)
- There was a pushback on regulation of investment managers whose profitability is under strain. This view was not shared by all.
- We considered risk in standard finance theory and societal risk (through an SDG lens). Big gap.
- We considered macro-stewardship. Stewardship is often viewed as “downward to companies by investors”. But what about macro-stewardship, upwards to policymakers/regulators? Putting 3 new members on the Exxon board was a fantastic result, but should our efforts focus on getting the risk rules under which Exxon operates changed?
- It was suggested that one of the COP26 goals should be to change the narrative to “gain not pain” given the opportunities the move to the low carbon economy offers. Too much “cost” chat around.
- It was suggested that our knowledge around insurance company solvency should be transferred to promote “earth solvency”
- A reinsurance discussion highlighted the fundamental problem of annual repricing in non-life insurance when it comes to insuring climate change risks. A participant illustrated how one part of the agriculture business was tackling that.

If we fail to understand different perspectives on justice, we will fail

Understanding the different perspectives of justice will be critical to a successful transition. The allocation of a finite resource requires an agreed rubric – and getting the necessary consensus to agree on a rubric will require the understanding of different perspectives of justice.

This session helped to build on [Biodiversity & Justice](#) paper that was presented at the recent [IFoA \(actuaries\) Biodiversity Sessional meeting](#):

- Actuaries have a concept of “Actuarial Fairness”, which has been developed over many decades of practice
- Biodiversity can help illustrate several of the justice and value perspectives

Within the discussion:

- We explored different meanings of justice and the subjectivity of values and framework
- We uncovered three different metric drivers and four different balance perspectives
- We noted that allowing for subjective value challenged the economic law of one price, which is the basis for 90%+ of economics and the economic consensus underpinning Western political institutions.

Mark Carney refers to the error of equating [market] price with value. We need to address and embrace this gap within our political institutions and public discourse to grapple with these perspectives of justice and the finite resource allocation choices our political economy will face.

I am still learning and feeling my way forward. I encourage everyone to engage in developing perspectives on justice. It will be critical in the second phase of a low carbon transition. (Once we have reduced emissions as much as possible, how do we allocate those hard to impossible emissions left and how does the allocation shift over time.) An opening example can be seen in this [work using different perspectives of fairness to reconcile bottom-up pledges](#). (In brief, the GHG budget for 2 degrees of warming can be achieved if all the countries target staying within a 1.5 degrees budget using the definition of fairness (justice) that best suits them.)

Outcomes from session

1. There are many different meanings to justice. Different meanings apply to different people (and we could barely scratch different cultural perspectives). Fairness is often used as the closest equivalent, but we felt there were other dimensions as well.
2. Justice of what, to whom, and who decides?
 - a. Value of what varies by perspective (eg value of a tree to someone using it for shade compared to someone who is remote)
 - b. Whom: can be individuals or collective with different direct and marginal impacts.
 - c. There are many dimensions along which a decision could be promoted as fair
3. Justice and value are subjective, not objective: if those identified can be objective, the value they determine is subjective to them, and the dimension to evaluate justice is subjective
 - a. Subjective value is a challenge to the law of one price on which most economics (and our political institutions) are based.
 - b. Carney may distinguish these as the problem of identifying [market] price with value. But fundamentally, this awareness is not embedded in our institutions nor our political-economic discourse.

- c. Subjective justice means we need to embrace different perspectives to reach a collective perspective on fair distributions.
- d. Much political discourse is essentially based on the primacy of a specific perspective of justice coupled with beliefs on outcomes from the system of economic incentives.
- e. Note that nationalist/political forces lead to advocacy of the perspective that they feel most favourable to them rather than engage in perspectives of “fair” or “just”.

We outlined three aspects of value (metric) and four dimensions of justice:

Three metrics to base justice on

1. Subjective value (differs by individual and group)
2. Distribution (diversity): even with a common value metric, the impacts/values are likely to vary across a group (generations, geography, income).
3. Three-capitals: beyond financial value, need to consider the impact on nature and human capital too.

Four dimensions of Justice

1. Opportunity vs Outcome
2. Equalness vs equity
3. Individual vs collective
4. Past/Present/Future

Justice questions to consider for a sustainable transition

We didn't spend long on the application to sustainable transition. But the starting point is to realise the justice focus on areas such as allocation of carbon budgets is based on wealth and power rather than through an exploration and consensus on justice.

- What's the value of biodiversity in the transition? (Eg forests)
 - Who should “pay” for preserving it and not economically developing it ... local forest communities, countries with forests, those who have destroyed their own nature?
- What is just from the global south perspective?
 - Is economic/technology leapfrogging realistic or unicorn fantasy?
 - What level is “fair” to lock in/restrain their consumption and economic attainment?
- What are the intergeneration implications of delay?
 - Is declining future living standards realistic i.e. destruction will outpace innovation? (and for whom (distributional))
 - What are the implications for integrational distributions, age-based benefits (pensions/care) and sovereign debt growth?
- What are the peace/security implications of wealth/power based determination of justice?
 - Is the endemic failure of nation-states a risk scenario or an inevitable one?

The How to pivot to a sustainable economy. Accounting could be a game changer

Summary of discussion

1. Presentation of Rethinking Capital analysis of the root cause of climate and social inequity and application to net zero transition
2. Application of normative accounting to seaweed farms, Blue Bonds and the Blue Economy generally.
3. Commitment to a thought experiment on these applications during Rethinking Capital's proof of concept phase.

Rethinking Capital analysis of the root cause of climate and social inequity

The root cause of climate & social inequity...

1. The economy has changed from industrial to intangible but all the rules that govern the economy haven't kept up...

...in today's economy, value is created in very different ways than in the industrial age

New sources of value creation and new assets have been born

In a networked world, intangible assets such as SaaS platforms, communities, learning from failure, AI and relationships are the assets that create or destroy long term sustainable value

And every sustainable entity must invest into its reputation and social license

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The root cause of climate & social inequity...

2. This is the third time in history that a shift of this scale has occurred...

...each time the same pattern repeats: the economy changes first and all of its rules, systems and norms only later adapt

Double entry bookkeeping has been proven twice before to be the catalyst to launch the new economy, formalising the new assets and enabling them to be leveraged

Leveraging the new assets in the two previous revolutions catalysed profound economic, social, scientific and cultural growth, the first being the Italian Renaissance

We've been here twice before, there is a roadmap out

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The root cause of climate & social inequity...

3. Economic theory has failed to keep up...

...only real/tangible capital comes within the definition of capital

...the law of scarcity in neoclassical economics (build a car once, sell it once) is being applied to intangible assets which are abundant (build them once, exchange them for value billions of times daily)

All derivative rules including accounting and reporting have then also failed to keep up

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The root cause of climate & social inequity...

4. Accounting practice has not kept up and has become the front line of the problem...

...accounting practice has become so illogical that it penalises net zero investments as a cost, whereas doing nothing is rewarded

...SME's and early stage technologies are denied access to growth capital

...in each case, only for the purpose of reducing tax

The same penalty treatment applies to all investments into sustainability initiatives: training, gender equity, plastic waste, staff well-being, responsible tax etc are all penalised, whereas doing nothing is rewarded

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The root cause of climate & social inequity...

5. The incentives are upside down. The system beliefs are upside down...

...worse still, the higher the investment, the higher the penalty. The lower the investment, the higher the reward

Imagine applying these rules to disciplining your children or dog

What one word would describe the home you'd be living in?

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The root cause of climate & social inequity...

6. The system is in a bind. The problem has become too big..

...substantial amounts of intangible assets (estimated around \$108 trillion globally) have never been recognised and are too big to begin to recognise now, Bayer as a case study has at least €129bn of undisclosed intangible value

Material levels of intangible liabilities such as climate risk have never been recognised and are too big to begin to recognise now

The problem is not the Standards but accounting practice at the stage of simple coding of expenses

The system needs an easy way out

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Applications to the Blue Economy

The Blue Economy is latent and needs capital to flow to catalyse many opportunities. Presently, the incentives are upside down and early stage technologies are being constrained in their growth.

The Blue Economy has substantial benefits, ocean health, seaweed farming and absorbing emissions being three that were mentioned.

Commitment to explore a thought experiment on applications to the Blue Economy during Rethinking Capital's proof of concept phase

Reflecting the rule that the people who come are the right people, Louisa and Suzanne had not met before the conference but both had expertise in the Blue Economy and a passion to be part of the transition to a Blue Economy. We have agreed to explore a thought experiment on the application of normative accounting to decisions to catalyse capital to flow into the Blue Economy invest. This could be run during Rethinking Capital's proof of concept phase to the end of 2021.

The Root Cause of Climate & Social Inequality

Summary of discussion

1. Presentation of Rethinking Capital analysis of the root cause of climate and social inequity and application to net zero transition
2. Application of normative accounting to soil health
3. Commitment to a thought experiment on this application to soil health during Rethinking Capital's proof of concept phase.

Rethinking Capital analysis of the root cause of climate and social inequity

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The system needs an easy way out

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Application to soil health

With current unsustainable farming practice, the incentives are upside down. Farmers are incentivised to over-produce and to erode soil quality and health.

The consequences of this are extreme. First, if these practices continue, it is estimated that there may be only 30-60 harvests left in the UK before the soil cannot be used. Second, healthy soil can be a carbon sink, whereas right now it is contributing to the climate emergency.

Commitment to a thought experiment on this application to soil health during Rethinking Capital's proof of concept phase

Reflecting the rule that the people who come are the right people, Nick and Julie had not met before, but both had expertise in soil health and a passion to be part of the transition to sustainable farming and soil health. We have agreed to run a thought experiment on the application of normative accounting to decisions to invest into or impair soil health. This will be run during Rethinking Capital's proof of concept phase to the end of 2021.

What have been (un)successful sustainability/social movements and why?

XR is different to anti-slavery, LGBTQ+, suffragettes, and minority/black rights because the “ask” is less clear (cf. Ban slavery, a clear ask)

-[Open] Does a protest movement need an ask?

-Policy (Overton) window (and influenced on corporates) may have moved, and that would be a success

-While energised some young, it has antagonised other population segments

-Degrowth not considered by majority of economists/policy makers as viable

-XR opens doors for change makers to influence corporates, policy

-cf. Outrage and Stonewall, (LGBTQ+)

-XR negative - is ZR now chipping out change makers and entrenching incumbents.

(Novel) are “leaders” emergent properties of complex systems. (e.g. a Greta would have emerged somehow in any case)

Cf. CFCs/Ozone, Nuclear.

Note how green party in Germany is now mainstream

Four theories/frameworks to note:

- Overton Window
- Swing Voter
- Median Voter
- Arrow’s Impossibility Theorem

And two challenging economic realities:

- Economic growth will be needed to lift the poor (intra and inter-country) out of poverty
- Decarbonisation across all areas of human life (Land/Food, Industry, Power, Building, Transport etc.) needed and low-carbon growth is not (yet) reality in most sectors.

Mainstream Economic Policy:

- Carbon tax/price solves 80% of problem (eg Jasion Furman view)
- (Vast) Innovation needed (subsidy helpful for early stage tech)
- Standards can help raise the bar

Challenging political realities:

- Poor/Middle class don’t want to pay (maybe no one wants to pay)
- Poor countries don’t want to pay vs rich countries
- [Open] Swing voter unlikely converting soon
- [Open] Median voter moving slowly

[Open] Arrow suggests a plurality needs to be an answer.

Median voter might suggest that education, activism in converting population may work. May push both window and policy in more green directions.

Swing voter might suggest that this is not possible as swing voter not being converted on climate matters. Geography of the swing voter also important.

(It did not occur to me so clearly until this conversation that the tactics for converting “swing” voters are likely different to the “median” voter strategy)

Alternative strategy: ignore/bypass voters

Carbon pricing/tax not viable to majority of swing and current median voters. (This does not ignore voters but essential complies with both views here)

Utilise “Industrial Strategy” policy for the major sectors that can slip by voters

e.g. raise standards, subsidise and go super large on innovation investment (but can govt do this? And what about health, education etc)

May be slow, but might be a political economy solution?? (One that elites and technocrat always use and so at risk of backlash)

[Aside] Importance of weak social ties or social network [cf. VC cf. UK COVID vaccine strategy]

Does XR/activist movement have a policy strategy?

Can economists propose anything better than carbon price?

Must it be techno-optimism that saves us?

[Open] Limits to markets

[Open] Do we need strong political vision

Waste management, circular economy and sustainability in general

At the Sustainability Accelerator UnConference I had a chance to explore waste management through experiences of different people, each seeing the world through a different lens. The conversation started with a session I was chairing, it spilled over into other sessions throughout the day, and carried on over the wine reception. Below is a mixture of topics discussed, reflections happening in my head, and things I didn't know how to communicate until somebody put it into words better than I ever could have done.

At the waste management session I shared a story about how I got into global waste management. Back in early 2020 I wanted to create an NGO that would focus on solving a particular problem in the waste management space. To come up with a specific project I could do, I had to do some research first. That research led to a conclusion that I didn't expect - many thousands of projects aimed at improving waste management systems are already happening, and the only thing that prevents them from making the world a better place is not the lack of funding or talent, it is the fact that they cancel each other out. This realisation resulted in Samudra.world - an organisation I set up with a long-term goal to come up with, and implement, a global waste management strategy that would amplify the positive impact of all players (companies big and small, local and national governments, NGOs, academia, etc.), without different efforts cancelling each other out.

Currently waste management accounts for 5-15% of climate impact caused by humans. The three main contributors are CO₂ (from open burning of waste, incineration, transporting the waste, energy required for recycling, etc.), methane from decomposition of organic waste, and black carbon from open burning of waste (which is often not included in climate models as it is not a gas). Small improvements to waste management systems in low- and middle-income countries would lead to great impact in terms of limiting climate change. Throughout the session we discussed the role of businesses, financial institutions, investors, innovators and communicators in fostering these improvements on a global level.

Everyone agreed that businesses can (and many are striving to) make a big impact by developing products that can be processed in an environmentally friendly way after they've been used - reused, recycled or composted. In theory, everyone agreed that less waste would be even better. As we were discussing baby nappies as an example, I pointed out that often we can discover simple solutions by looking at how things are done in other cultures - in China babies are potty trained around their first birthday, which leads to much less nappy waste per baby compared to the UK. An entrepreneur from an eco-friendly nappy company immediately confessed that this would be a disaster - "we want to make nappies more eco-friendly, but we don't want to sell less of them". After all, business is business. Charging more for eco-friendly alternatives is a good business opportunity, while selling less is not.

At the sustainable food session, we discussed how currently about 30% of all food produced becomes waste instead of being eaten. If we could solve the food waste problem, feeding an extra billion people would not be a problem. From a wider sustainability perspective, we have to facilitate a shift towards less carbon, land and water intensive foods. For me personally this is difficult exactly because it is easy to do. Important decisions, like how to insulate one's home or what kind of car to buy, are made rarely; it is obvious that they will have a long-term impact and hence a lot of time is invested in getting them right. I make decisions about what to eat every day, and hence it doesn't really matter what I eat today, as I can always start eating more sustainably from tomorrow. The kind of hypothetical tomorrow that never comes.

At the circular economy session, I was lucky to meet a person who described what I want to achieve with Samudra.world in a much better way than I've ever managed to. They said we need a global sustainability "orchestrator" who would bring everyone's efforts together and coordinate action across different regions and groups of stakeholders. Later in the discussion somebody said "We are trying so

hard to not step on each other's toes while we are all on fire"; this really resonates with me. This is the main reason why I often disagree with NGOs and charities in the waste management space - they are focused on improving livelihoods, one community at a time, ensuring that nobody loses a source of income because of their intervention, and that they don't step on anyone's toes. I am focused on structural changes that will lead to large scale improvements for the climate and the environment. Minimising the extent of climate change, improving the quality of air and drinking water, increasing fertility of soils and oceans will benefit everyone. On my journey to achieve these changes I will inevitably step on some toes, and I've made peace with that.

It is widely accepted that thinking about waste management should start way before an item reaches the trash can. It is the job of product designers to create products that can be easily reused, remanufactured or recycled after they've been used. In this session we've discussed how the journey actually starts much earlier than that. First, the business model is developed. It has to be something that can be financed and insured through existing structures. For example, you'll never find a construction company that reuses structural components (high quality components that are made to last and could easily be reused) simply because insurance companies don't have procedures for insuring these kinds of buildings. Designers come in at a much later stage; they are encouraged to use their creativity, as long as they stay inside the box created for them by the limitations of financing, insurance and other business considerations. Often due to budget cuts even products designed with circularity in mind become linear. For example, furniture parts that are designed to be screwed together to allow for disassembly and reuse later can be assembled much cheaper by nailing them together.

As the effects of climate change get worse and changes aimed to mitigate them accelerate, the pressure to invest in short-term projects with quick returns on investment will increase. This will lead to difficulties with financing long-term projects, no matter how great their potential to prevent climate disaster. But, as one person pointed out, a long-term investment with a low return rate is better than the whole investment wiped out by a climate disaster.

By the end of the session, we reached a consensus - "the future is either circular or there is no future". Circular economy is not a single "circle", it is many intersecting circles of different sizes - local, national, global, etc. The question is what stays in the countries and what gets exported? Which company or country gets the credit for being circular? How does competition fit into the circular economy model? One thing is clear, no single company or country can be "a whole circle", circular economy is a team sport. We should recognise that there are no externalities, the whole planet is one big system and everything we do impacts this single system. Perhaps calling this year O2021 would inspire us to work harder towards a better future?

At the global south session, we discussed the need to put really important conversations on the agenda. This is one of the goals I'm trying to achieve with Samudra.world - to foster discussions about technologies, infrastructure, and financing instead of discussing the harm plastic straws do to turtles. In terms of the relationships between the global north and the global south, there is a lot of emphasis on providing help, while nobody wants to talk about removing structures (trade barriers, subsidies, etc.) that have been put in place to ensure that the dominance of the global north remains unchallenged.

From a general sustainability perspective, in my mind the situation is as follows: Rich countries are at the front of the race, poor countries are far behind. Rich countries are focused on staying ahead (also referred to as "leading by example"), while poor countries are focused on catching up. The problem is that nobody really knows where the finish line is, so it's impossible to say who is actually leading and who is behind. Instead of focussing on overtaking one another, we could collaborate to find the right direction.

At the global decisions session, we discussed how there are no organisations with an adequate capacity to make global decisions. I think that an organisation that could facilitate decision making in a particular area on a global level has to have technical expertise in that area, good connections to various types of stakeholders across the globe, a vision, and an ability to constantly evolve this vision as circumstances change. I am working towards building such an organisation for waste management. I am grateful for the chance to attend the UnConference, to get connected and get inspired.

What is your definition of sustainability?

Sustainability is the zeitgeist and it occurred to me that it would be interesting to see if there was a consensus among the esteemed group assembled. Perhaps it might mean something different to those living in California to those living in Africa or the Philippines. They may all suffer from the effects of climate change, but, the respective populations may be affected differently given economics, culture and geographic locations.

The group agreed that those in rich western countries many times show a lack of empathy when considering how poorer countries might cope. For example, in Malawi, the population uses wood to cook, that has led to deforestation. They have coal, but, it is now frowned upon by climate activist. What is the solution for countries like Malawi, what is their definition of sustainability?

It was mentioned that the UN using the term Sustainable Development Goals (SDGs) had been wrong as it alluded to 'developing' and not really addressing the urgency of the situation.

One person asked the question 'what do you want to sustain'? He challenged that many speaking about sustainability may not be willing to be inconvenienced themselves. Some may like their lifestyles and want others to make changes. There was a lot of discussion among the group as to getting everyone to understand their individual obligations to future generations.

What or who do we value? Does Elon Musk going to outer space or Facebook building avatars to interact with other humans mean more than saving the planet? Should we value equity in resources?

The discussion moved on to 'individual' or 'collective' actions to drive changes in behaviours. Also, what is the role of government to encourage behavioural changes. We all acknowledged how the global handling of the pandemic has led to nationalism and a lack of leadership to combat the pandemic. The statement 'we are not safe until all are safe' seemed to be appropriate for the topic of sustainability and how we are all connected as human beings.

A message for COP26 is to consider the pledge of [The Children's Fire](#):

'No law, no decision, no action, nothing of any kind will be permitted to go out from this council of chiefs that will harm the children'

A quote that might be considered among the world leaders at COP26 is by Roy Sesana, *'We are the ancestors of our grandchildren's children. We look after them, just as our ancestors look after us. We aren't here for ourselves. We are here for each other and for the children of our grandchildren'*.

How can investors improve their stewardship?

Common challenges

1. Stewardship is undervalued. Often seen as cost, instead of value-adding.
2. Stewardship teams are not adequately resourced.
3. Stewardship being undervalued by investment consultants in their discussions with asset owners.
4. Focus on policies/inputs, rather than outcomes, e.g., size of stewardship/ESG teams, number of votes cast vs. impact of engagement on companies (writing letters to companies in itself doesn't count as impact).
5. Duopoly of proxy advisory firms ISS and Glass Lewis.
6. Lengthening ownership chain in light of increased use of intermediaries, e.g., investment consultants, external asset managers etc.

Key opportunities for improvement

1. Greater shareholder democracy, where investors' voices are fairly represented. Tumelo will help – it provides voting software so that members of pension schemes can indicate their preferences as to how the funds their money is invested in, vote.
2. Move beyond micro-stewardship with individual companies to macro-stewardship. This involves investors making an impact beyond their own value chain, e.g., influencing policymakers and empowering companies through collaborative support (Climate Action 100+ etc.).
3. Improve commonality of measures as supported by various initiatives, including the Partnership for Carbon Accounting Financials (PCAF). PCAF is a global partnership of financial institutions that work together to develop a harmonized approach to disclose the greenhouse gas emissions associated with their loans and investment.
4. Sharper focus on culture and long-term value by investors and corporates. Tone at the top and compensation/performance management are important factors.

Are we decarbonising the construction quickly enough?

'Net Zero by 2050' is the target laid down in British Law – but what does that mean? And what happens if we don't make it?

Achieving 'net zero' by a deadline is a commitment being set out by many firms at the moment, often without having identified a potential route to getting there. Many haven't yet identified that whilst the 'net' in net zero allows offsetting, there can never be enough offsetting options for the entire human race to decarbonise, and so the actual goal is Absolute Zero by their target date. Or for those of us in the UK, a legal requirement for our country to reduce emissions to absolute zero by 2050.

Societal alignment

Moving towards zero will only happen all of society is united in ambition and action. Examples of actions feeding into this societal alignment includes:

- Investment feeding money into low carbon R&D
- Policy rewritten to encourage quicker decarbonisation of materials and processes
- Public opinion shifting to prioritise decarbonisation over other drivers
- Technology developing in order to reduce emissions beyond what can be achieved today
- Information campaigns that prevent greenwashing from being the norm
- ...to name but a few

Without societal alignment (e.g.: the public demand wants to reduce their carbon footprint but policy doesn't enable that; or decarbonisation regulation is introduced at a level unachievable by technology), then progress is difficult, and insufficient momentum builds up to create real change. However, when each of the separate parts are aligned and make progress together, we create 'societal momentum', meaning that each of the parts cause other parts to become more effective, in a virtuous cycle. This societal momentum leads to real change – think of how much more effective covid vaccines are when the public is convinced of their benefit, policy enables efficient vaccination programmes, technology exists to safely verify and produce sufficient supply, and the finances are aligned with the goal of sticking needles in arms as quickly as possible.

Decarbonising construction

In the built environment, we rely on construction materials that don't currently have a clear route to zero emissions without the use of carbon capture (a technology not yet proven at scale). As such, it is common knowledge that a Use Less Stuff approach needs to be prioritised, with reuse and retrofit needing to take priority, followed by efficient design, and an agreement to worry first about today's emissions before doing clever things based around guesswork around post-2050 circular economy scenarios.

But even with all the *Use Less Stuff* thinking in the world, it's unlikely that material use will ever drop to zero. Countries need to develop, meaning roads and hospitals and sewage networks and housing. Combined with the admission that we don't know how to fully decarbonise our materials without carbon capture, it's likely that construction in 2050 will remain a net emitter. A recent study by the UKGBC aligns with this, indicating that in the UK, construction emissions only decrease by 80% by 2050 even with high levels of carbon capture. If that's the prediction for one of the world's richest countries, with a mature and durable stock of existing buildings, then what chances does the rest of the world have?

The bigger picture

Of course, the built environment is one part of a large carbon emitting system. Most other polluting activities can be electrified to remove their emissions – although there are notable exceptions including aviation and shipping (both of which would need so many batteries that they would sink and fall out of the sky), and ruminants (the 24/7 methane emitters we refer to as "cows", "sheep", and "goats").

Construction emissions are 10% of global emissions, aviation and shipping another X%, and ruminants a further X%. So X% in total or about X billion tonnes of greenhouse gases. These are 'hard to abate' industries, with less clarity about the route to zero emissions, and a higher likelihood of remaining as net emitters in 2050.

Anecdotally I've heard people argue that the remaining industries of the world, when combined with the rewilding of the land and oceans, will be carbon-negative enough to achieve an overall balance across the global system, and the IPCC Special Report on 1.5°C featured net zero pathways aligned with this thinking.

However, it's not particularly easy to dig out the numbers on what is acceptable for each industry to admit, and I suspect that most in the built environment could put a number on what their sector's 'carbon allowance' looks like over the next 28 years. Personally, I also worry that there are too many incentives for other industries to avoid decarbonising, meaning that too many different sectors believe that can be "the only sector that doesn't fully decarbonise". But maybe this is where growing societal momentum will come in.

Growing societal momentum

Ever since the UK passed its 'Net Zero by 2050' law two years ago, the country has experienced a growing societal momentum towards decarbonisation, with an unprecedented shift in public opinion, policy, and investment beginning to align in a green revolution. Progress is far from perfect – most of

the public aren't yet comfortable with the idea of wholesale lifestyle changes, and misinformation is rife – but momentum is beginning to build in the right direction.

Currently society's focus is on fossil fuel companies (with good reason) for avoiding diversifying away from burning fossil fuels, and policymakers are under pressure to take action. But it seems inevitable that over time, through growing public interest and awareness, we will see the focus broaden and start to question who else is preventing progress from being quick enough.

When it becomes clear that sectors such as construction aren't putting in enough investment to decarbonisation or aren't trying to change 'the norm' about what to expect from a new building, then we will become 'the bad guys'. For those unable to show that they are being truly transformative, reputational damage will be inevitable, but with it will come the change we need.

Societal momentum is growing, and will push us towards a greener, cleaner, safer, and happier future. We can choose to push our industry from within to stay ahead of the curve, or we can wait to be forced into taking action by other parts of society. I know what I'd choose.

Why doesn't my mum/friend/colleague understand?

When you're keen to see the world change, convincing others to come round to your way of thinking can be stressful. It's easy to ruin a family day out by being unable to resist trying to make a point about everyone there needing to do something about their carbon footprint, to take BLM more seriously, or to better work on understanding why your child wants to be referred to as "they" rather than "he". I recently had a conversation with a group of sustainability friends, where we attempted to unpick the difficulties each of us have faced in trying to convince other people that putting carbon first is important. We learnt a lot about the practicalities of persuasion in the course of our discussion, and I hope that some of these thoughts help you with your own efforts to change the world one piece at a time.

It was a discussion of two halves. First we realised that trying to change someone else's point of view is complicated – there's sadly no one simple answer to the question that forms the title of this article.

The long list of barriers that you could come up against include:

A lack of facts: they don't know what you know, and their view of 'normal' is well-ingrained. Eating meat once a week (because meat = emissions = deaths) seems normal and obvious to you... but not to everyone you speak to.

- A lack of trust: we divide the world into "us" and "them". Left-wing and right. British and European. Hippies and squares. Global North and Global South. Instinctively we trust the opinions of those in our tribe, and are suspicious of outsiders.
- A different direction of empathy: people's experiences (specifically who they've met and where they've visited) all affect how they'll react when they hear "typhoon in the Philippines", or "drought in Malawi". What might seem important to you may not have any reaction at all for them. And what affects their local neighbourhood might seem more important to them than it

does to you. It doesn't mean there's no empathy there, it just might not be directed where you expect.

- They've got other issues to deal with: "yes, I'd love my house extension to be low-carbon, but I'm raising three kids, we need the extra space, and we're on a budget." Your long-term climate concerns can be trumped by more immediate concerns of the person you're talking to.
- Comfort in denial: climate change is overwhelming and scary. Talking about the climate isn't as fun as talking about your holiday plans, and so many would rather not spend their time on such a topic.

After discussing barriers, we then also moved onto solutions, and how we frame these. The first thing that jumped out to us was that when we try to persuade people to change their ways, it's all too easy to jump in with ideas that are negatively framed. "Don't fly / avoid the steak / ditch the car" sounds restrictive and not all that nice. Yet "take the train / try the falafel / jump on your bike" makes the same point in a very different way.

The other big point we settled on was that as with everything in life, ideas and ideals have early adopters, stragglers, and everything in between. If you're reading this, then you're probably at the early end of the scale. And it's possible that the people that you're most struggling to get through to are at in the straggler camp. Why not focus your energy on those who sit somewhere in the middle, who just need a bit of convincing? Who do you know who is similar to you, who'll trust your views, who might share some of your empathy, and who is open to your ideas? These people will be easier to convince than the stragglers, and are more likely to convince others in their circles too.

So, the conclusion of our conversation was surprisingly simple in the end. Q: Why doesn't my mum understand? A: It doesn't matter.

The goal isn't to change everyone's mind, it's to change enough people's mind that the "norm" shifts, which leads to unstoppable change. Pick the easy wins; focus on the people who will understand what you say, and who'll go on to convince other people. Give these people the facts, help them understand (in their terms) why the 'norm' is a problem, and understand where their empathy lies before talking about who'll be most affected by it. Give them a positive outlook on where change will get them to ("you might not be able to spend a weekend in Majorca... you might have to go for a whole week"), and then give them your top three things they can do to make a difference.

My top three things most people can choose to do if they want to secure a greener safer future for humans:

1. Use your voice. Speak to your friends and those you think will listen. It'll help you feel better about the topic if you have people to talk to about it, and you might find they've already given it some thought. Email your MP too (their email addresses are publicly accessible here), so that they understand that their constituents want to live more sustainably, but find it too difficult/expensive/time-consuming at the moment.
2. Eat more plants. You'll feel healthier for it, it's usually cheaper, and it's easier than you think to get enough protein/iron in your diet (Lewis Hamilton, Venus Williams, and David Haye are all vegan, and most Kenyan long-distance runners only eat meat on special occasions). Buy a secondhand copy of The Green Roasting Tin off eBay to get 75 veggie and vegan easy one-tin recipes for £10.
3. Enjoy the wonders of travel. Cycling is so much more refreshing than driving in your car (particularly if you don't live in a city!), and taking the train instead of the plane will make your holiday longer and richer by giving you scenery and experiences unachievable from a sterile airport and a sterile sardine can in the sky. Check out The Man in Seat 61 at www.seat61.com to work out how to get the train to Marseille or Milan in a day, and Valencia or Athens in two. Yes, it rules out

a Friday night to Sunday night trip to Riga, but who wants to come back from a weekend with memories full of budget airline stresses anyway?