



Promoting Climate Justice in Consumption Production Systems

Hybrid Roundtable Event



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Foreword

By Christopher Gleadle, CEO, The Paddy Ashdown Forum

As the twenty-first century progresses, we see increasing technological advance, further growth of the culture of sustainability, the circular economy, Environmental and Social Governance, more Climate and Biodiversity COP's and a great many other talking shops. Despite this climate, environmental, social, and financial backdrop:

- emissions are still rising
- services of the biosphere are shrinking,
- productivity is on the decline
- all global societies are fractured.

This suggests a rather toxic paradox. Something must change in the immediate term as we rapidly burn the IPCC carbon budget.

For this publication, the Paddy Ashdown Forum, European Liberal Forum and Fondazione Luigi Einaudi have joined forces to tackle the dilemma of justice in consumption production systems and the many complex relationships attached to the many interdependent problems: not least between the traditional siloed paradigm of people, planet, and profit.

From fragmented specialisms to the fragmentation of people, planet, and profit, has created a culture that lacks capability to develop truly durable, holistic political solutions to what seems a multitude of fragmented single problems. Climate change reveals all the inequalities, development speeds, social philosophies, legal systems, political goals, distributions of power, ecosystems, geo-climatic particularities, and natural preconditions for a good life that exist around the globe in all their contradictions and harsh realities. Ultimately, the topic is personal to everybody, yet so difficult to grasp.

Thus, the essays in this brief collection represent a thoughtful attempt to address questions of the climate paradox. They are written by a diverse group of experienced and knowledgeable colleagues. But it will not give you straight forward answers, however it will inform you of the complexity of the issues and make suggestions how a systemised approach can alleviate issues of the paradox today and not leave a whole set of new problems for our children and grandchildren as a result of the over reliance on single fragmented solutions to deliver a silver bullet at some vague point in the future that supports business as usual practices today.

Consequently, we ask you, our dear reader, to read and understand this collection of essays in the whole. View them holistically. Taken as a whole, the essays attempt to advance thinking and actions within our relationship with each other and the natural world. To understand each and every action has a consequence that may appear distant, that traditional analytical tools and problem-solving methods do not account for.

And, since, today, we all find ourselves at a time of crisis this collection of essays can be seen to be timely since it seeks to remove the lid on sound bites, disinformation, and clever headlines to create a platform of dialogue for all ages and levels of knowledge and experience. From the enthusiastic student to the most hardened and experienced diplomat.

This collection is an excellent sign that a highly diverse group of leading thinkers from a diverse range of backgrounds and training can come together, bridge fragmented specialisms, and take up the challenge of tackling the climate paradox, and we trust that you will be rewarded by making time to learn from them.

Chapter 1

Introduction: Pie in the sky to reality on the ground

By Christopher Gleadle, CEO, The Paddy Ashdown Forum

Despite 26 Conference of the Parties (COPs), Climate Change has taken on a Kafkaesque quality and morphed to a Climate Emergency. This suggests the current patterns of global development are not sustainably viable. Consequently, solutions - institutional, technological, behavioural, or otherwise, needed to address the multiple challenges of the Climate Emergency - are urgently required. For example, to remove the barriers between People, Planet and Profit since the explanation in its current form creates polarisation as bias on one pillar or another acts as a barrier to understanding that each is a function of the other. Thus, actions, to be effective, need to be accompanied by a balance between the urgent precipitous reductions in emissions, reductions in the total level of consumption and production of goods and services as well as a realignment of how products and services are offered and consumed in order that a section of global society is not marginalised.

Problem Areas in need of immediate attention:

- a. The consumption and production cycle are among the key drivers of greenhouse-gas (GHG) emissions. So far, there is little evidence that the decoupling of the economy from GHG emissions is occurring at either the scale or speed required.
- b. Investments in a more sustainable infrastructure - including renewable energy - will themselves, require extensive amounts of energy - largely from fossil sources. Combined with a lack of any robust measurement of environmental return on investment equal to financial return on investment, then this too will significantly sap the global carbon budget established by the Intergovernmental Panel on Climate Change (IPCC) to remain within 1.5 degrees.
- c. To improve the standard of living and well-being of the world's lowest income communities will claim another major portion of the carbon allowance.

Socio-environmental decline

Against the backdrop of rising affluence of the few what we see is increasing economic insecurity for low-income households. Contributing issues to this divergence can be seen as declining wages (in real terms), increasing migration, technological change, declining resource availability, human rights abuses, illegal land-grabs, and skills gaps between education and work.

Indeed, the pervasive lack of multidisciplinary skill sets, specifically to managerial and engineering perspectives, can also be seen as a driver of socio-environmental decline. This owes much to the traditional silos within structure and governance where the negative impact between pools of knowledge are not accounted for and thus contribute to resource depletion, waste, emissions, pollution, biodiversity loss and poor health amongst others.

Likewise, as with policy makers who are far too keen to focus on the role of consumer decision making to influence acquisition and market behaviour on resource exploitation. As a result, much policy supports suboptimal technology shifts formed from an over reliance on technologies that don't yet exist and there is no evidence the pie-in-the-sky technologies could ever be delivered at scale. Consequently, policy is driven on blind faith that a miracle will happen tomorrow supported by billions of tax-payers money, that ultimately supports only a business-as-usual agenda where burn now pay later is the overarching rule of thumb. This has left low-income sectors marginalised or excluded, and the effects on resource decline and climate change have been worsened: particularly, in key consumption areas such as transportation, food, agriculture and energy. Regrettably, what appears plain, is that the background theoretical work reflects little of the real-world as evidenced by the Kafkaesque morphing of Climate Change to the Climate Emergency.

Accordingly, it is increasingly acknowledged that siloed sub-optimal technological interventions to stem the adverse effects of dangerous climate change are likely to prove insufficient. This suggests more creative strategies to reshape prevalent production / consumption practices are required.

Emissions measurement paradox

There is an expanding use of consumption based GHG accounting, which assigns emissions on the basis of embodied carbon content at points of consumption. Yet, since measurement boundaries are a variable and there is no practical understanding of feedback loops, misbehaviour in GHG accounting is rife. It follows, net-zero is a vague number. Consequently, any sense of urgency to reduce emissions today is diminished and the only upward trend is the lack of public trust.

Evidence shows emission levels in a number of the world's largest cities are approximately 60% greater than generally calculated and reductions have been extremely limited even when governments have implemented what appears to be relatively ambitious climate policies.¹

1 Consumption-based Emissions of C40 Cities

As a result, there is growing realisation that current interventions to encourage the re-engineering of individual products (or infrastructure) - or to incrementally modify the consumption behaviour of end-users - are likely to be ineffectual, inadequate and create a myriad of unintended consequences. This is true not only from the position of reducing GHG emissions and reducing the pressure on the biosphere, but also with respect to addressing other major challenges such as the effective disposal of waste and stopping exposure to hazardous materials.

Consequently, it is necessary to adopt a more innovative sustainably viable stance and to focus on more holistic systems-level modes of analysis and intervention that increase the decision space and move us from incremental initiatives to exponential improvement.

Thus, we need to harmonise:

- i. Interdependent consumption and production cycles as producers seek to raise sales volumes and higher consumer purchases incentivise more production.
- ii. Since business and policy agendas are dependent on maintaining the above arrangements through the economic growth imperative, tension is created among the effects of multiple interacting investment, organisational, environmental, governance and social ecosystems. How actions of each affects the many.
- iii. Technological and human systems are affected by both function and time. Technologies and human interaction are currently arranged in silos. The barrier's silos create not only hamper the effectiveness of climate action but ignore the negative side-effects of and between decisions. To take a whole-systems Sphere Economy approach will reveal not just synergies but symbiotic relationships along and across value chains at the nexus of energy, water, food, health, shelter, land, and transport amongst others.
- iv. Increasing efficiency of natural resource use risks stimulating demand from counterinitiative rebound effects. It follows, this will, at least partly, offset initial technological achievements.
- v. The objectives of policies aimed at reducing the adverse effects of consumption and production often compete with equally important social goals to reduce societal inequalities and poverty.

“Sometimes it’s not about things but the relationship between things.” - Christopher Gleadle, 2015

Making Three Dimensional Decisions in a Three Dimensional World

The current unsustainable choreography of consumption and production cycles requires the interlocking of interdependent global challenges that include climate change, biodiversity loss, water, food, energy, poverty,

and inequality. Yet, policy interventions to date focus nearly exclusively on isolated technological innovation of technologies that are unproven both in terms of capability and scalability. And where the role of consumption has been recognised it has in the most part been framed in terms of individual decision-making, primarily within a market context. Over time, it has become clear that this approach will not yield the results critically needed. It follows, to be effective, policymaking needs to generate greater empirical insights that reflect the real world. This will involve developing a comprehensive systemic understanding of production-consumption systems based upon a rigorous reporting criteria similar to that of financial return on investment to provide a platform for greater governance.

Additionally, precipitous reductions in consumption-related emissions of the wealthier nations will be essential if there is to be equitable near-term economic development of poorer nations. In contrast, the trend observed (1998–2013) has been for increased inequalities in carbon emissions between individuals within countries.

Global CO_{2e} emissions remain highly concentrated today: top 10% emitters contribute to about 45% of global emissions, while bottom 50% emitters contribute to 13% of global emissions. Top 10% emitters live on all continents, with one third of them from emerging countries.²

And, while the circular economy mark's a germ of change in attitudes, prevailing knowledge gaps hinder progress beyond that of business as usual since it still doesn't take account of misbehaviour at the nexus of hard and soft systems or the lack of imagination within managerial, operational, investment and governance decision making.³ It follows, the circular economy needs to shift to a holistic systems paradigm – a Sphere Economy (Fig 1) – to affect the way goods and services are provided. And, while digital technologies can enable a reintroduction of product to service swaps – the benefits of these innovations are ambiguous⁴ due to dubious impact accounting.

**“If you can't imagine it,
your model can't capture
it, and that means the
evidence won't reflect it.”**
- Christopher Gleadle, 2018

2 Global Inequality of Carbon Emissions (1998–2013) and Prospects for an Equitable Adaptation Fund. Paris: Paris School of Economics. Lucas Chancel, Iddri & Paris School of Economics Thomas Piketty, Paris School of Economics

3 Gleadle C, 2018, The 5 Essential Steps to Sustainable Viability

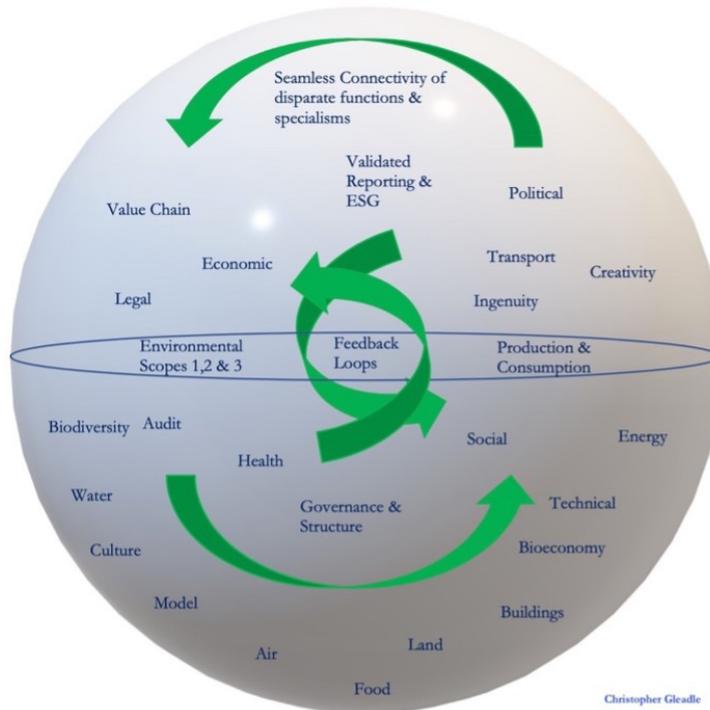
4 Gleadle C, 2021, Sustainability, ESG and the Productivity Paradox

The role of Integrated Economics

Consumption and production outcomes are derived from the allocation of capital, as well as how the profits derived from these allocations are apportioned among various stakeholders. The political economy approach emphasises efforts to alleviate inequalities embedded in these arrangements as a route toward the creation of more sustainable provisioning arrangements.

To advance this position, the Sphere Economy has its roots in ecological economics and industrial ecology that takes account of the feedback loops between decisions and actions. Consequently, the Sustainably Viable Sphere Economy designs, and audits flows of material, energy, information and thus the relationships, that can then be used to model how spheres of Production and Consumption can be remodelled to reduce pressure on ecosystem services, the inflow of raw material, and absorption of outflow that it will be useful in various ways - for environmental management, biodiversity, community well-being and economic management - from the enhanced understanding and benefit of the feedback loops. Thus achieve zero-waste systems and improved social equivalence.

Therefore, to reorient from obsession on the process and moving to an outcome focussed integrated Sphere Economy approach provides a useful foundation for more systemic analysis. Systemic Integration reveals the interdependencies of consumption-production cycles to show the relative sustainable viability of the system. This means it is essential to stop narrow sectoral insights as the basis for policy and practice. For example, studies of productivity tend to be classified by economic systems, with resource use being typically defined by material categories, and indicators of economic and environmental health being generally organised by national borders. Yet, overseen by critical systems thinking of the SV Sphere Economy can accelerate progress toward zero-waste consumption-production systems that create secondary symbiotic markets across and along value chains that will support the well-being of communities.



Christopher Gleadle Fig 1 – The Sphere Economy.

Sphere Economy applies a holistic three-dimensional systems perspective over time to decision making. This enables consideration of alternative ways to govern the provisioning of resources not only at points of activity but along and across value chains. Thus, issues of equity and valuation of capital – economic, human, and natural – are visualised to help temper protectionist reactions that are detrimental to that capital. Thus, reduce risk.

Sphere Economy leapfrogs the two-dimensional circular economy since it includes feedback loops within decision making in a manner similar to the abundance creating feedback loops of the Biosphere. By this action risk, waste, emissions, and impact are better understood and can be better audited for comparability.

Sphere Economy tackles multiple issues simultaneously accelerating action toward an equitable and authentic net-zero world. It implies making three dimensional decisions in a three-dimensional world.

Mind-the-Knowledge-Gaps

Sustainably viable consumption and production systems require reduced GHG emissions and resource demand. Consequently, current perceived organisational logic of contemporary consumption-production cycles needs to be shifted toward a better understanding of how, at the nexus of hard and soft systems, what technological, institutional, and social changes are required for sustainable viability to be accomplished in

ways that ensure a just transition to net-zero, zero-waste, organisations.

It follows, understanding the feedback loops within the Sphere Economy highlights understanding of the relationship between both decreasing inequality within societies and reducing impacts upon society and the biosphere.

“...theoretical work can spin off under its own momentum, reflecting little of the empirical world”

- Elinor Ostrom, *Governing the Commons*, 1990

Understanding systems of consumption and production

Evidence shows that due to a lack of understanding as to the interdependence and feedback-loops of consumption and production cycles, policy interventions have created unintended consequences that have escalated social and environmental impacts on

one hand and hindered demand-side reductions on the other.⁵

It follows, to shift from a programme of siloed policy making to a holistic paradigm of policy commitments that harmonises policy will improve value to meet societal and environmental objectives. Consequently, it is vital to account for the effects of multiple interacting investment, organisational, environmental, governance and social ecosystems. Such action will be key to improving both sociotechnical and socioeconomic change.

Policy tools

Currently, governance at all levels contributes to growing inequality and marginalisation. This phenomenon is prevalent between urban and rural regions as well as within cities. These disparities are absent even from recognised sustainability strategies that emphasise popular notions such as circular economy, green growth, and the New Green Deal.

In addition to their relative neglect of climate justice, the dominant schools of sustainability research and policy tend to study issues from technical and managerial perspectives that overemphasise quantification, efficiency, and markets as siloed topics. This orientation results in inadequate attention being devoted to the misbehaviour at the nexus of hard and soft systems and misses the opportunity to optimal outcomes.⁶ Accordingly, research needs to account for the feedback loops within structural power relationships to help overcome conflicts among contrasting institutional as well as geopolitical governance and structure.

⁵ Sustainable DNA For Policy Makers. C Gleadle 2018
⁶ [Naive Modelling](#), C Gleadle 2020

The Sphere Economy enables consideration of alternative ways in which to govern the provisioning of energy, water, waste, mineral resources, products (agricultural as well as others), not only at particular points of activity (for example through markets or trade agreements), but along entire transnational value chains.

And while the pursuit of justice is becoming ever more prominent in global climate and environmental negotiations, policies based upon sustainable viability and the sphere economy can advance fairness and temper 'hard-wired' protectionist reactions that are detrimental to both society and nature. For example, while there is popular support for sustainability initiatives that involve constraints on personal consumption, such policies are undermined by inequality. Yet, accounting for feedback loops within systems of production and consumption new modes of governance can foster harmonised partnerships with social movements that seek to promote inclusiveness.

The negative impacts between power groups

The contribution of the finance industry in perpetuating unsustainable economic practices as a barrier to change deserves special attention. Indeed, in the face of rising ESG (Environmental Social Governance) activity, severe knowledge gaps coupled with the absence of globally binding rules on advancing authoritative zero-waste standards as well as the lack of rigorous accountability to environmental and social returns on investment, both corporations and national economies are caught in a competition spiral that compels them to perpetuate various forms of degradation and to amplify social and environmental inequities. For example, global value chains are structured and governed by powerful and highly influential actors that are not adequately informed of the benefits, thus not incentivised, to design and implement three dimensional systems – for example, the food system and the interaction between agriculture, processing, logistics, storage, retail, and service.

The role of the city / region / district in policy making

The city/regional/district level provides a solid geographic basis for projects close to citizens and therefore consumers and enables societal, technical, and economic co-development. Beyond municipal or regional impact, small-scale local initiatives can become engines of change since the opportunity to scale-up will come in various forms as illustrated by the sphere economy. But importantly, supportive policies and governance at the local/regional level must be accompanied by harmonised policies and governance at national as well as cross border levels. This will require strong stakeholder engagement to gain agency at inter and intra levels.

For example, in countries such as Africa, where rural communities are spatially distant, to operationalise SV integration of hi-tech, low-tech, biotech and skills emphasises the increased use of all resources and creation of zero-waste systems. Accordingly, the sphere economy approach understands, and maps extended relationships that define the continuous operations, growth, and profitability of production and consumption value chains and installs a programme of actions that create secondary symbiotic markets that increase job diversity, energy security, educational opportunity, economic development, land, and agricultural output, with the amelioration of biodiversity and natural resources.

Accordingly, such an approach underpins local and national economies acting as an incubator for new eco-innovative developments. As a result, emissions and waste are reduced with impact to land, air and water tackled to provide support for health and well-being.

Conclusion

If we are to achieve true net-zero, zero-waste economies, there needs to be a precipitous decline in emissions today and not at some vague point in the future where hopes are pinned on technologies that do not even exist yet, and there is no evidence that they can even be scaled. Therefore, it is necessary to develop ways to stimulate the establishment of political and institutional configurations to ones that are sustainably viable and take advantage of the Sphere Economy. To do more with what we have. Such a change can accelerate positive climate action to avoid the moral hazard of target failure.

The multiple interacting investment, organisational, environmental, social and governance ecosystems will shape the hope of the many for sustainably viable lifestyles. Consequently, to enable society to live within the consumption levels compatible with IPCC targets it is vital for decision makers to broaden their decision space that will enable the ability to formulate policy measures that encourage and enable sustainably viable lifestyles that accord with the thresholds of the IPCC and most importantly the biosphere.

Chapter 2

Justice in Consumption Production Systems - People

By Isabelle Parasram, CEO, Social Value UK

“How can we place people at the centre of decision-making in achieving a green transition, whilst acknowledging the intersection and real-life competition between people, planet and profit?”

- Isabelle Parasram, 2021

At [Social Value UK](#) ('SVUK') we are committed to accounting for social and environmental value. By doing this, we believe that we and those organisations and individuals who operate by our [Principles](#), are better placed to protect the environment and fight for equality. As the dust settled at the end of COP26, we, as well as our members and other stakeholders, considered what the next steps should be for governments, as well as organisations and individuals.

There is a general consensus that a green transition has to happen. The issue is, how do we achieve it? We argue that people must be at the heart of any transition. Our [Social Value Principles](#) can serve as a broad framework for this. Social and environmental impact need to be considered together. Principles 1 and 8 *involving stakeholders* and *being responsive* promote involving people and responding to their values and needs. Principle 4 - *only*

include what is material - strives for organisations to be accountable for impacts that are considered material to the organisation and all of its stakeholders.

Sarah Gordon, CEO of the Impact Investing Institute, told [Pioneers Post](#) that there are three components to a just transition to net zero: climate, social impact and community involvement. But, she added, there is...“*a big issue around the siloing of social and environmental impact*”.

Another key factor is the intersection and interdependence of 'People, Planet and Profit' and how that squares with the competition between them that is exhibited in reality. As I discussed with delegates at the round tables that I hosted at our recent Paddy Ashdown Forum event: '*People, Planet, Profit: Justice in Consumption Production Systems*', People, Planet, Profit' are, perhaps, *both/and*, rather than *one versus another*. We, at SVUK, believe that the three pillars are a function of one another. As a result, they are neither in competition or a contradiction. Except, that is, via the paradigm that that is how they have been

created by the triple bottom line and the unintended consequence of polarisation that is not there when seen from the Sphere Economy. The Sphere Economy takes account of the natural feedback loops between the three siloed pillars to bring them into one whole paradigm.¹ This is the challenge that organisations need to face in terms of balancing the impacts they are and will continue to have on 'People, Planet and Profit'.

What happened at COP26?

Although there were issues surrounding inclusivity and fair representation at COP26², there were also some significant agreements and commitments made via [The Glasgow Climate Pact](#):

- countries will meet next year to pledge further cuts to emissions of carbon dioxide (CO₂)
- a commitment has been made to 'phase down' (rather than 'phase out') coal
- there will be a significant increase in money to help poor countries cope with the effects of climate change and to make the switch to clean energy
- world leaders agreed to phase-out subsidies that artificially lower the price of coal, oil, and natural gas
- the world's biggest CO₂ emitters, the US and China, pledged to cooperate more, over the next decade, on issues including methane emissions and the switch to 'clean' energy
- leaders from more than 100 countries - with about 85% of the world's forests - promised to stop deforestation by 2030
- a scheme to cut 30% of methane emissions by 2030 was agreed by more than 100 countries
- financial organisations controlling \$130tn agreed to back 'clean' technology, such as renewable energy, and direct finance away from fossil fuel-burning industries.

These are some significant and promising steps forward. I am keen to see the action that comes out of the commitment and whether it will be enough.

Principle 1 – people at the centre

At Social Value UK, we are guided by our [Principles](#), particularly Principle 1³. We believe that following COP26, people should be at the centre of both the actions being planned and those being taken. This applies at all levels, from hearing from stakeholders with a public stage - such as [Greta Thunberg](#), the acclaimed Youth

1 Gleadle, C. (2018) The Five Essential Steps to Sustainable Viability How to Grow, Be Profitable and Align With 1.5 Degrees

2 Additional information – see bibliography

3 Involve stakeholders – Inform what gets measured and how this is measured and valued in an account of social value by involving stakeholders.

Climate Activist - to involving people from communities who are impacted by climate change in the proposed actions those in power might decide to take.

Examples of the latter include national-level policy programmes in the US where local community-based organisations are given complete control over the design and implementation of communication and outreach strategies such as:

- [BetterBuildings Michigan](#), focussing on adopting home energy efficiency retrofits and
- [Food: Too Good to Waste \(FTGTW\)](#), focussing on reducing household food waste

Both initiatives seek to influence individual behaviour and choices, through people and place-centred messaging, financial incentives, and peer support. In both cases, the onus of changing behaviour and adopting energy efficiency and waste reduction measures is placed on the household.

Of course, there are limitations and disadvantages to this approach – such as being unable to address the weaknesses of other key stakeholders' involvement in the projects. But, if the mission and objectives of these projects were defined in collaboration with the local communities that are the subject of the action, then they are good examples of engaging stakeholders at a local level. The challenge with any programme engaging directly with people is feedback loops⁴ - how that programme is meeting the needs, priorities, and values of those groups.

Another example is the work being done by Women Organizing for Change in Agriculture and Natural Resource Management ([WOCAN](#)). This is a women-led international membership network of multi-gender agricultural professionals and women's associations. It has created [The W+ Standard](#) - a unique certification label developed by WOCAN that endorses projects that create increased social and economic benefits for women participating in economic development or environment projects. This includes those that provide renewable energy technologies, time and labour-saving devices, forest and agriculture activities, and employment opportunities. In much of the world, women comprise the majority of farmers and natural resource managers yet are often excluded from decision-making and do not have equal access to resources. This standard seeks to offer accountability for actual factors of change in affected women's lives, and a market-based mechanism to divert climate focused investment to projects that increase both environmental and equality value. This is a direct example of the linkage between 'People, Planet and Profit'.

4 Gleadle, C., (2021), Sustainability, ESG, And the Productivity Paradox

As someone passionate about democratic engagement, I am also encouraged by the creation of the first Climate Assembly in the UK. [Climate Assembly](#) UK brought together more than 100 people from different backgrounds and points of view to discuss how the UK should meet its Net Zero targets. You can find out more about the individual members in the BBC documentary: [‘The People v Climate Change’](#). The assembly members met over six weekends in Spring 2020. They heard balanced evidence on the choices the UK faces, discussed them, and made recommendations about what the UK should do to become net zero by 2050.

Their final report, [‘The path to net zero’](#) was published in September 2020. The report conveys Assembly members’ agreement on themes that recurred throughout their discussions, on the need for:

- improved information and education for all on climate change;
- fairness, including across sectors, geographies, incomes and health;
- freedom and choice for individuals and local areas;
- and strong leadership from government.

Why is inclusion important to the ongoing work of COP26?

According to The Institute for Public Policy Research (IPPR) report [‘Fairness and opportunity: A people-powered plan for the green transition’](#):

“...action to address the accelerating climate and nature emergencies can be about more than staving off the worst; it can be about imagining a better world which we can build together. To realise this vision will require a new approach which understands the inextricable link between addressing the climate and nature crises with the necessary speed and ambition, and simultaneously tackling economic and social injustice. The transformation must be rooted in fairness, and we believe that a successful transition means that people must be at the heart of the policymaking process, and those most affected by change must be the ones to shape it.”

In an [article by the World Economic Forum](#)⁵, leaders and influencers in the civil society sector stated, in simple terms, what they believe inclusion can achieve and what we need to do to ensure it takes place – in the context of taking effective action following COP26:

1. **“Learn from the Global South”** - Asif Saleh, Executive Director, Bangladesh Rural Advancement Committee (BRAC)
2. **“Stand in solidarity with vulnerable countries”** - Ani Dasgupta, President and CEO, World Resource Institute (WRI)
3. **“Protect and promote civic space”** - Lysa John, Secretary General, Civicus
4. **“Create climate-friendly jobs”** - Sharan Burrow, Secretary General, ITUC
5. **“Don’t discriminate”** - Gabriela Bucher, Executive Director, Oxfam International
6. **“Leave no one behind”** - Victor Pineda, President, World Enabled

Diversity, equality and inclusion are an essential part of our work for the future.

Is the green transition creating and/or worsening social injustice?

We are concerned that the laudable goal of a green transition towards Net Zero is currently having a negative impact on social justice, with one sometimes pitted against another.

Examples of this include the loss of jobs in carbon intensive industries and some low carbon transport options, such as e-scooters, and bicycles being inaccessible to some parts of the population, such as older people.

Another example of this was highlighted by Amnesty International in a research paper titled: [‘Kenya: Families torn apart: Forced eviction of Indigenous people in Embobut forest’](#). A government task force on conserving forests by ejecting forest communities concluded that the Kenya Forest Service (KFS) colluded in extensive illegal logging and destruction of the Embobut Forest. They also noted that the Sengwer were being blamed and persecuted for this. What did the government do in response? It evicted the Sengwer without proper consultation or informed consent. This was in breach of national and international laws.

These methods, in the name of a ‘green transition’ are unacceptable and a violation of social justice. The consequences are far-reaching – families that seek to remain live in sub-standard housing that is constantly being destroyed. Families are torn apart, with one or some members remaining in their original community, whilst other family members are displaced. And people who resist eviction have been injured or killed in the forcible eviction process.

⁵ World Economic Forum et al, (2021), COP26: Why climate action must be inclusive. 6 experts explain

There is also the real concern about activity taking place as a 'tick box' exercise. In its briefing paper, ['Tightening the Net: Net zero climate targets – implications for land and food equity'](#), Oxfam warned that:

“Net zero should be a pathway to real and transformative climate action and not greenwash. Carbon emissions need to be reduced now, and land-based climate solutions must centre 'food-first' approaches that help achieve both zero emissions and zero hunger.”

Novara Media⁶, in its article: 'Bogus Nature Based Solutions Won't Solve the Climate Crisis It's just corporate greenwashing'⁷ highlighted the potential hypocrisy of action being taken against climate breakdown:

“Nature-based solutions' to the climate crisis are the talk of the town at Cop26...Clearly, it's an intoxicating idea: after decades of inaction, nature can come to save us from climate breakdown. But the concept of nature-based solutions is a wolf in sheep's clothing – and one that will likely lead to massive violations of Indigenous rights.”

Principle 8 – doing something

At SVUK, we also believe that those in power need to take appropriate action. This is based on our Principle 8⁸ – of being responsive. Through proper accounting for social value, including tackling bias in social and environmental reporting, those in power have a responsibility to respond to the data – which should be collated and evaluated in a way that presents a true and accurate picture of the action of group of actions being assessed. Crucially, being responsive requires an assessment of both the positive and negative impacts that a single action or group of actions may have on people and planet. Holistic action is key to achieving the 3 equally important goals of climate justice, social justice and a just transition.⁹

⁶ Novara Media is an independent media organisation addressing the issues that are set to define the 21st century, from a crisis of capitalism to racism and climate change.

⁷ Chandrasekaran, K., (2021), Bogus Nature Based Solutions Won't Solve the Climate Crisis It's just corporate greenwashing

⁸ Be responsive – Pursue optimum Social Value based on decision making that is timely and supported by appropriate accounting and reporting.

⁹ A 'just transition' means moving to a more sustainable economy in a way that's fair to everyone – including people working in polluting industries –this is as defined by Greenpeace.

What is Social Value UK currently doing?

As a professional membership body, we both support and are guided by our members:

CASE STUDY ONE: [Trees for Cities](#) is a Social Value UK Pioneer member and has achieved Level One of the Social Value Management Certificate - the first environmental organisation to do so. It is the only UK charity working at a national and international scale to improve lives by planting trees in cities. Its team becomes a part of local communities to cultivate lasting change in their neighbourhoods – whether it is revitalising forgotten spaces, creating healthier environments, or getting people excited about growing, foraging, and eating healthy food. It has planted 1,285,073 trees, engaged 2,479 volunteers, taken part in 258 projects overseas, taught over 28,343 school children about trees and healthy eating and delivered 53 planting projects in 27 cities.

On the topic of COP26 they said:

“We know that deep and long-lasting change can only be made if tomorrow’s generation is involved and inspired to take action today, so we are asking you to join the [#GenerationTree movement](#).”

CASE STUDY TWO: NPC is a charity whose mission is to help the charity sector achieve the greatest possible impact, by working with charities and social enterprises, funders, and investors to help them develop and improve their strategies and practices. NPC is known for a focus on impact measurement and management and has been one of the organisations leading the adoption of theory of change approaches across the UK among both charities

and funders.

It starts from the basis that every charity wants to know, “Did we make a difference?” It provides training, consultancy and policy guidance for the charity sector in the evaluation of their work using both quantitative and qualitative data and evidence, to enable organisations to gain useful insights about their work: “Did the project or service make a difference in people’s lives. If yes, how so? If not, why not?” They explain how to turn an organisation’s theory of change into a plan for measurement, the five types of data they will need to pay attention to, and how to prioritise what to measure. They also drill down into evaluation techniques:

1. Quantitative methods - collecting data from staff and service users, using surveys, online data and social media.
2. Qualitative data - hearing from service users about their experience and perceptions in their own words.
3. Sampling - concentrating on better data from a small representative group, rather than lots of poor-quality data from lots of people.
4. Evidence standards - understanding how evidence standards apply to an intervention.
5. Research ethics - understanding the ethical issues that come up when service users are involved as participants in research.
6. Analysing and using data - making sense of the data collected, finding patterns and themes, so the organisation can learn and improve.
7. Developing a learning culture - everyone involved in the project collecting data, thinking about results and trying to continuously improve.

NPC is a partner member of SVUK and has worked with SVUK on the [Inspiring Impact](#) programme to help charities and social enterprises in England improve their impact practice.

NPC is helping charities across multiple disciplines to understand [‘Where social justice and environmental justice meet’](#). It recently featured the work of the Climate Crew, a group of six social sector leaders, interested in the sector’s role in tackling the climate crisis. They identified that:

“...our sector doesn’t have an awareness problem, nor do we have a willingness problem. We have an impetus problem. So, we narrowed the scope of our problem: How might we show our colleagues in the social sector the links between their work and the environmental crisis, and show ways that they can take action?”

They then set out a plan for proactive, collective action in 4 phases, which I repeat here:

Phase One: Empathise

They used human centred design to explore the topic, capture insight, define the problem they wanted to design for and propose solutions. For their research phase, they surveyed 44 peers from across the sector. They asked if their organisations acknowledged the crisis, what they were doing already, what barriers they had to action, who was responsible in their organisations, whether they were motivated to act and if they had suggestions to overcome barriers and make real strides forward.

Phase Two: Define

They narrowed the scope of the problem: How might they show colleagues in the social sector the links between their work and the environmental crisis, and show ways that they could take action?

Phase Three and Four: Ideate and prototype

Based on the insights and principles they gained, they produced two prototypes, in the form of 'wheels'. Their prototypes address three simple questions:

- a. Why should it feature high up for the specific organisation?
- b. Now that the organisation sees why it matters so much for that organisation, what might they do that would have a material impact?
- c. How can the organisation get started with these actions?

The 'Why Wheel'

This wheel brings together a body of evidence, with references, detailing why social justice issues and the climate crisis are connected.

The 'What and How Wheel'

This wheel makes it accessible and easy for organisations to look at what actions they might take. It is not exhaustive, but each segment introduces a different type of action and is accompanied by a corresponding resource which can help.

Conclusion - What can we, as individuals do?

It was interesting that, at all three round tables that I hosted at our Paddy Ashdown Forum event, the responsibility of politicians and their power to achieve change arose again and again. Whilst the onus on our politicians is correct and necessary, we all need to do our part.

Individual action can lead to collective change. It is key to personal empowerment and to ensuring that ordinary people feel equipped to take tangible measures in

the fight to overcome the climate crisis. It will also be a significant contributing factor to populations having the knowledge and experience to hold our governments, and institutions to account.

I was therefore inspired by the contribution of one particular delegate who wanted to shift the focus to individual responsibility. We discussed action steps that could be taken by ordinary members of the public and, from this and other, linked debates I have had with a variety of our stakeholders, I have created a list of things almost anyone can do to help address the climate crisis¹⁰:

1. Buy second hand instead of new (or don't buy at all!)
2. Reduce packaging use ideas from "9 ways to reduce your plastic use by Greenpeace UK"¹¹
3. Turn lights and appliances off

IF YOU CAN:

1. Install double glazing
2. Insulate and draft proof our homes

OR:

1. Join a union or housing collective to petition your landlord, housing association, and local council to make these changes
2. Walk, cycle, and use public transport
3. Buy a low emission car or an electric or a hybrid car – after careful research¹² in order to be able to make an informed decision about what is right for you
4. Consider alternatives to flying (or don't go!)
5. Consider eating an eco-friendly diet. Buy from sustainable brands, such as Fairtrade, and companies reducing their environmental impact¹³
6. Grow bee/insect friendly plants in your garden or window boxes
7. Transfer to a renewable energy supplier, or a green option at your current supplier

If the Social Value UK principles of *engaging stakeholders, only including what is material and being responsive* are to be the foundations of action in response to a people-centred approach to climate change, then it would seem sensible to start with ourselves and build our collective power to enact systemic change.

My challenge to readers is to look, not only outwards at what governments, organisations and others can do, but also to consider what steps we can take towards a just transition – both large and small.

¹⁰ For more ideas, take a look at 'There Is No Planet B': <https://theresnoplanetb.net/>

¹¹ See more here: <https://www.greenpeace.org.uk/news/9-ways-reduce-plastic-use/>

¹² Gleadle, C., (2018), Sustainable DNA for Policy Makers

¹³ Like those signed up to <https://wrap.org.uk/taking-action/plastic-packaging/the-uk-plastics-pact/whos-signed-up>

Chapter 3

Justice in Consumption Production Systems - Planet

By Patrizia Feletig, Author for Fondazione Luigi Einaudi and Freelance Journalist

To fit the roundtable, talk into the main theme of the event: justice in consumption and production systems, the proposed point of discussion was inspired by an outcome from COP26: the USA and EU decision to reject the proposal of monetary compensation to poor economies in order to respond to the loss and damages derived from natural disasters correlated to climate change and to adapt to global temperatures rise. Western economies rejected the request submitted by G77+ (representing 134 developing countries plus China) of a \$100 billion/year fund.

Rich countries are at the most only willing to back technical assistance while opposed to the idea of funding poor countries.

To frame the issue, natural disasters kill on average 60,000 people per year, globally. Globally, natural disasters were responsible for 0.1% of deaths over the past decade. As of 2020, the economic loss due to natural disaster events worldwide amounted to about 268 billion U.S. dollars. Natural disasters occur as a result of natural processes on Earth. There are a lot of different types of natural disasters that can occur, including floods, hurricanes, earthquakes, and tsunamis. As well as the European Disaster Risk Management that helps continental populations to better cope with disasters, other organizations from Western economies are involved in action to reduce the impact of adverse events. Disaster risk management work focuses on prevention and increasing the resilience of infrastructure, ecosystems, and society which is lacking in most Global South regions.

Poor countries are expected to experience more extreme meteorological events. As a consequence, they suffer an increased exposure and vulnerability to disasters. For instance, climate change is bringing along more extreme weather events, sea-level rise, and changes in the geographical distribution of some infectious diseases. Urbanization and development in hazardous areas have been putting more people and wealth in harm's way. Urban settings amplify disaster risks such as floods, heatwaves, or epidemics. Biodiversity degradation worldwide is reducing the capacity of ecosystems to protect us against the impact of disasters. Against

this complex backdrop, it is crucial to have arrangements in place for effective prevention, mitigation, preparedness, response, and recovery from disasters.

Disaster Risk Management assistance could encompass a robust understanding of disaster risks as the first step towards addressing the risks effectively by mapping key disaster risk in exposed nations. Western countries could be offering complements and supports to local national action and promote cross-border cooperation. Disaster risk management could develop preparedness and feasibility studies, cost-benefit analyses, and a global online repository of disaster-related data, research, and project results.

Is opposing the idea of subsidizing poor countries, and limiting rich countries aid only to technical support to be considered a climate injustice? And does this missed target widen the gap to limit global heating in line with the +1.5° increase?

To frame the context, we shared some data on the trend of emissions since the preindustrial era. (See FIG1)

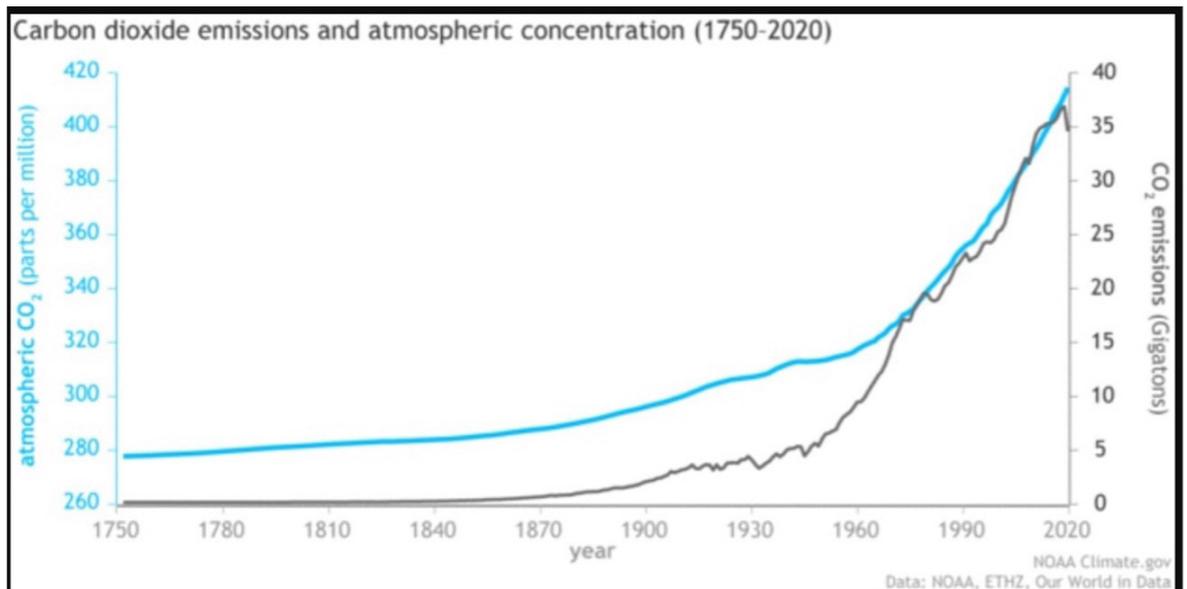


FIG 1¹

Emissions are steadily growing but moreover it is to be noticed that half of the excess global anthropogenic CO₂ emissions have been released into the atmosphere after 1990, the year of the second (the first was in Stockholm in 1972. The first UN COP was in 1995) UN climate conference. Since then, scientific consensus has constantly warned public opinion of the danger of climate change and urged governments to commit to action. None the less, emissions are still rising, and the meagre decline of 6/7% during the pandemic year, has been

¹ National Oceanic and Atmospheric Administration et al, 2021, Our World in Data Carbon dioxide emissions and atmospheric concentration (1750-2020)

completely recovered, and by the end of 2021 emissions will equal 2019 the record year of 36.7 Giga tons.

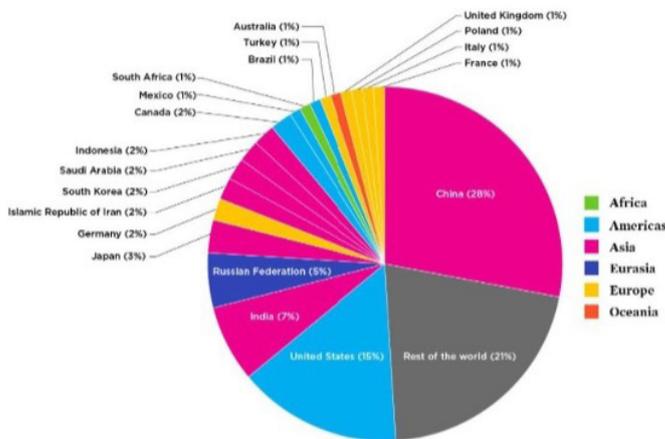
The breakdown of the total amount of CO₂ emissions shows who are the top emitters: China, US, India. Over one third of global emissions are attributed to China and India. (See FIG 2)

REPORTS & MULTIMEDIA / EXPLAINER

Each Country's Share of CO₂ Emissions

Published Jul 16, 2008 | Updated Aug 12, 2020

FIG 2²



But to get a correct picture of the responsibility we must look at per-capita emissions (See FIG 3) and the ranking is upside down.

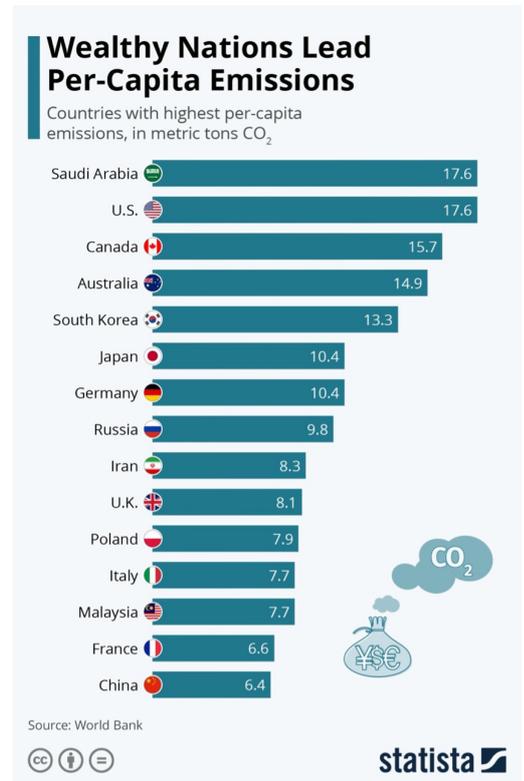


FIG 3³

² Union of Concerned Scientists, 2020, Each Country's Share of CO₂ Emissions
³ Statista, 2021, Wealthy Nations Lead Per Capita Emissions

China is on the bottom of the line, preceded by several the Western nations opposing to support poor countries with adaptation and compensation funds.

But since climate change is the effect of the stock of emissions stratified over the centuries, it is relevant to look upon the breakdown by world regions of anthropogenic greenhouse gas emitted over the period 1751-2018. Europe and USA equal the rest of the world. (See FIG 4)

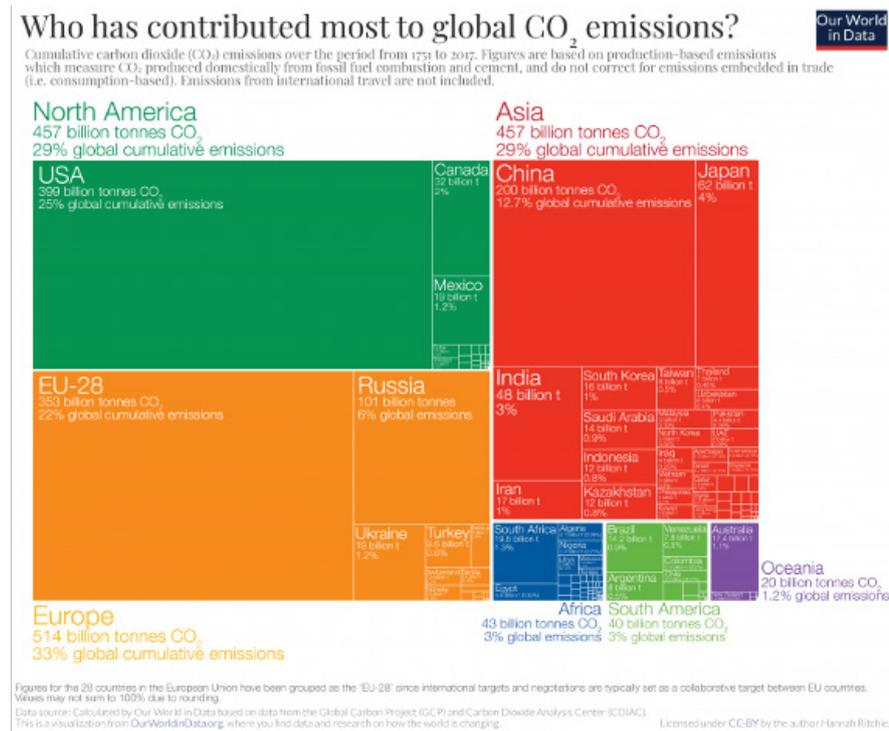


FIG 4⁴

Since curbing emissions and reaching the net zero target by mid-century requires reducing:

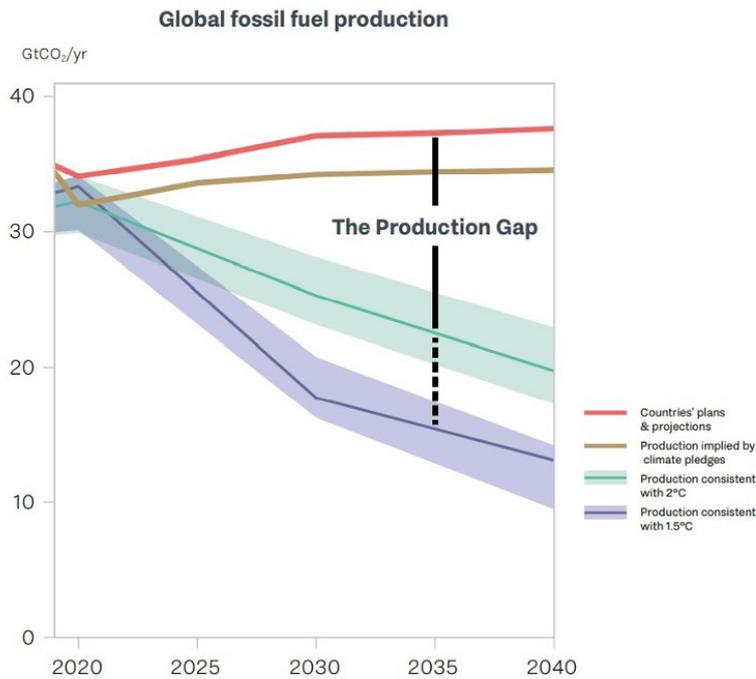
- the energy intensity of manufacturing process
- the emission intensity of the energy generation.

We are then considering how far the transition stretches. From the news to late-

4 Our World in Data, 2020, Who Has Contributed Most to global CO₂ Emissions

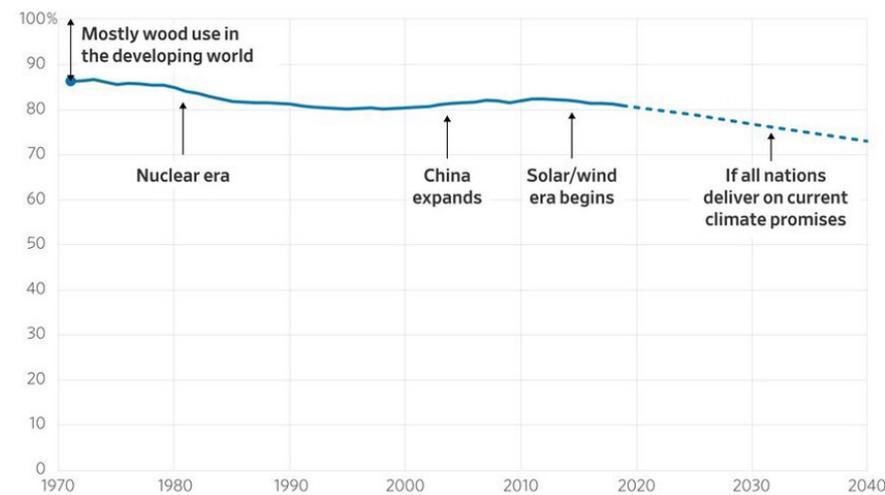
night shows, much of the media makes it sound as if renewable sources of energy are on the verge of taking over coal, oil, and gas. Has the sunset of fossil fuels finally arrived?

FIG 5⁵



Fossil Fuels, 1971-2040, as a Percentage of Global Energy Supply

FIG 6⁶



Source: International Energy Agency

5 UNEP, 2021, Governments' fossil fuel production plans dangerously out of sync with Paris limits - Global Fossil Fuel Production
 6 International Energy Agency, 2021, Fossil Fuels, 1971-2040, as a Percentage of Global Energy Supply

The chart from UNEP (see FIG 5) shows how difficult it is putting reductions into practice: the brown line indicates governments' planned fossil fuel production with country climate pledge and it is not matching with estimates of fuel production projection, which is higher. Worst of all, both red and brown lines are completely out of pace with the Paris Agreement cooling pledge: limiting in the second half of the century the increase of the global temperature to +1.5°C or +2°C of preindustrial age. By 2030 UNEP estimates that the production of fossil fuels will be more than double that of the required level to limit a global temperature increase to 1,5°C (and +45% associated with a +2°C increase target).

From all fossil fuels production, gas and oil companies are consolidating their shares in the worldwide energy supply; and only coal consumption is shrinking slightly. Globally coal use is expected to decline despite some countertrends in specific geographical areas such as what readers hear in the news about China and India expanding the use of coal.

In 2019 the world energy supply still depended on 81% from fossil fuels. According to the International Energy Agency, in 2040, fossil fuels will still make up 73% of the energy supply. (See FIG 6).

Decarbonizing the way we produce and consume products, or heat our buildings, is important. Electrification is a leverage point: electric vehicles, gas-fired home to heat pump, etc. Yet almost one billion people do not have access to electricity. They use wood, dung, cardboard, and have no proper stove. Indoor air pollution is one of the world's largest environmental problems – particularly for the 2.5 billion poor who do not have access to clean fuel for heating and cooking. Indeed, the World Health Organization estimates that indoor premature death toll per year is over 15 times higher than climate change additional deaths per year. Furthermore, according to WHO report, over the next 30 years, we shall see over 250 thousand additional deaths per year: victims of diseases such as malnutrition, malaria, diarrhea, heat stress - all correlating to extreme weather events due to climate change. Whereas we shall expect 3.8 million per year of premature deaths for pneumonia, stroke, and lung cancer due to poor indoor air quality.

“Poverty is the greatest polluter” - Indira Gandhi

“Poverty is the greatest polluter” as Indira Gandhi used to say. And poverty is a top risk factor for vulnerability to climate change since poor economies do not have the financial strength to invest in early detection, prevention, and alleviation of the consequences of extreme

weather events as a by-product of the overheating of the planet. By mid-November 2021, Delhi closed schools and colleges, smart working, and even

had to shut down five out of its eleven coal fired power plants, that reside inside the city, because of intolerable smog level.

To conclude: Poor countries which are not responsible for the climate crisis, find themselves the hardest hit. Finance for adaptation raised a major point of discussion in the climate diplomacy. Does, to reject their request, represent a climate injustice, which consequently too, impacts the chance to meet the global emission target?

Overall, the roundtable participants, did not oppose the idea of trade-offs between climate change policies and financial transfer to Global South economies from rich nations. They acknowledged that Western economies have responsibilities in the stock of emissions, they recognize that we are all affected since we all live on the same planet. But opinions are blended. Some participants underline that putting it only on monetary terms highlights an unsustainable perspective. It is awkward for Western politicians to make it acceptable to their electorate: why not alleviate poverty first in their own nation? In the past years, individual taxpayers have shown themselves to be unwilling to pay even negligible additional costs such a carbon tax on petrol or diesel (remember French yellow- vest revolt). Then there are future tax recommendations such as raising the tax on methane for domestic use from 5% to 20%, as suggested by the Climate Change Committee, in the UK. Sadly, in contrast, little consideration is given by most governments to disbursement of funds that merely go into the state coffers of foreign nations without clear accountability as compensation for past loss.

It is better to back up specific projects, not governments. It is essential to support the funding with an impact assessment to know that these funds are spent in an effective way, steered into the right place to improve living conditions and will not be used to merely cover budgetary expenses, or worst, forwarded into an offshore bank account of a government official. – despite international laws on corruption.

Overheating of the planet is the initial fault of Western nation's; but writing a cheque is not the answer. Surely it is better to consider technology transfer. To some extent, according to one guest, it is rather a semantic issue. Referring to monetary compensation scares and is counterproductive; that is probably the reason why the negotiation in Glasgow failed. Tactically, instead of referring to this funding only in monetary terms, it would have been better to name it "forward investment" rather than "indemnity". It shifts the mood from guilt of the past to promise of the future. It is most important to underline that it is in the best interests of rich nations, to do so. For instance, the rise of sea levels doesn't just threaten the global economy and the value chains of global enterprise, and the people of far-off nations, but also threatens coastal cities closer to home – in Britain for example - as well as regions of the Global South.

Handling just cash will not educate global south countries to stop bad practices. It is important to reach out and to understand, in context for each nation and its people, which measures to prioritize. Even adaptation comes before mitigation in poor economies. As a counterpart, western countries, should do more to curb our emissions to balance top emitters like China and India, which right now, need huge amounts of base-load energy to develop rapidly just as we grew during the industrial revolution.

It is more a collective liability rather than an individual responsibility, although individuals are now asked to change their lifestyle and undergo sacrifices. The current set up of carbon tax constitutes a regressive levy since it hits consumption, not revenues, and impacts more the poor rather than affluent citizens.

According to one participant, ineffective Climate Change policies are also the consequence of not having more female politicians. However, there is no evidence supporting this statement. But we can deduce that since women, generally speaking, display a different risk-taking profile compared to men, female decision makers may tend to perform greater political savvy on environmental issues with a long run approach rather than the current shortsighted outlook of their male colleagues. The problem with climate change is that it produces evidence too slowly to be solved in a timely manner. The clock is ticking. We need to recognize that it is difficult for public decision makers to undertake unpopular decisions on the energy transition or economic transformation, since the benefits from emissions reduction are expected to appear long after their next electoral test. Therefore, they cannot monetize these programs with the voters. It is our children or grandchildren that maybe the benefactors.

Last, but not least, according to one participant, it is relevant in the climate change discussions not to miss the importance of biodiversity preservation by focusing just on an overheating world. This timely consideration raises the question on the role of biodiversity in climate change adaptation strategies and vice versa. As climate changes, it causes alteration to where and how animals and plants live and essentially determines if such species can ultimately thrive. Just as increased temperatures produce stress in human communities—through rising sea water levels, increased incidence of storms and wildfires, climate change also imposes severe stress on animals and plant species. Generally, adaptation measures are focused on technological, human activities and societal aspects and less concern about their impact on biodiversity. Several reports confirm that nature and climate are inextricably linked. There are synergies between the two in adaptation policy and planning. Human activities are the drivers of biodiversity loss and climate change, and they mutually reinforce each other. Though this concept has gained scientific consensus, ecosystem-based adaptation strategy is often overlooked by policy decision makers. All the more true in the Global South where poor people are often directly dependent on natural resources of

their ecosystems and have little access to technical measures. Consequently, a holistic approach blending adaptation plans with resource conservation and land-use management would result in a more cost-effective protection measure.

Finally, back to the question whether rich countries refusal to financially support poor countries loss and damages related to climate change natural disasters will slow down the global effort to limit heating of average temperatures in line with the +1.5° increase? It might be the case since the imbalance prompted some large emerging economies to declare that they will set and deliver climate targets on their own schedule and not on the COP timetable. At first sight climate change policies versus financial help can appear more like a retaliation than a fair trade-off. However, we should remember that back in 2009, during the UN Climate Conference in Copenhagen, wealthy nations made a significant pledge. They promised to channel US\$100 billion a year to poor nations by 2020, however, this target was missed every year, reaching only US \$80 billion in 2019. (See FIG 7)

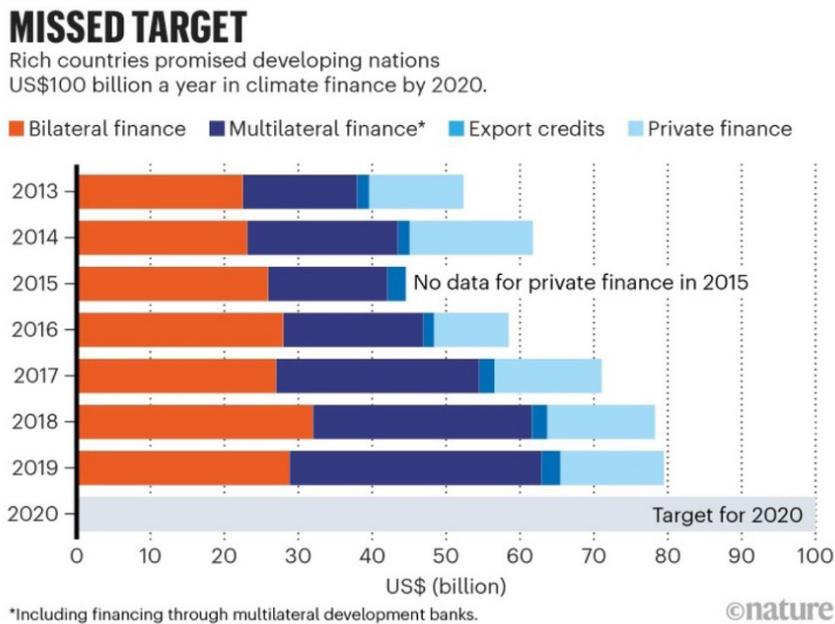


FIG 7⁷

7 Nature, 2021, Missed Target – Rich Countries promised developing nations US\$100 billion a year in climate finance by 2020

Chapter 4

Justice in Consumption Production Systems - Profit

By Dr Shann Turnbull, Principal, Institute for Self-Governance

Justice in Consumption – Production Systems is not possible when investors in such systems are over-paid with profits in excess of their incentive to invest. Leading economists like Thomas Picketty are not even aware of the existence of what I describe as “surplus”¹ profits.

He is not alone. Economists do not even have a word to describe the idea because they assume that there is no limit to human greed. Such a belief may be true with some people. But practical investors, even the most greedy, are not fortune-tellers.

This means that in practice, investors cannot rely on the distant future to recover the cost of their investment with a competitive return. Their decision to invest depends on speculating they can obtain all their money back with a competitive return within the foreseeable future. Their foreseeable future is described as an investor’s time horizon.

Intellectual property rights, like Patents, with a life of 20 years systemically introduce this period as their time horizon. However, the patent knowledge may produce profits much longer. International investors are exposed to indeterminate political, social and foreign exchange volatility that limit their time horizon to ten years or less. But as Professor Edith Penrose noted, direct foreign investment introduces to the host community what she described as: “the acceptance of an unlimited, unknown and uncontrollable foreign liability”² This must mostly represent “surplus” profits.

1 Turnbull, S., (2000), ‘Stakeholder governance: A cybernetic and property rights analysis’, in: The history of Management thought: Corporate Governance

2 Penrose. E.T., (1956), Foreign investment and the growth of the firm

Surplus profits are not trivial. They can be many times greater than the initial cost of an investment. Picketty points out³: “Throughout most of human history, the inescapable fact is that the rate of return on capital has been at least 10 to 20 times greater than the rate of growth of output (and income)”. Picketty then asks the question without any compelling answer: “Why is the return on capital greater than the growth rate?”

Economists ask this question because they cannot conceive of the idea of surplus profits. Unlike ‘economic rents’ that are reported by accountants, surplus profits cannot be reported. What is not reported cannot be taxed. The problem arises because accounting doctrines do not require the identification and so reporting of investor time horizons. It provides another reason why economists are not aware of the concept of “surplus” profits. I have been reporting the concept in books and journals since the last century⁴.

As surplus profits cannot be taxed a solution is to share them. This can be achieved by providing investors with a tax incentive. The incentive increases short-term profits in return for gifting each year a small fraction of their equity, and so long term profits to citizens. This provides a way to build a universal wellbeing citizen income to privatize the tax and welfare system, reduce the role, size, cost, and intrusiveness of government. It also enriches democracy with localized ownership and control of both businesses and the host environment. The ability to attract investors to high-risk ventures with property rights limited to 15 years or less has been demonstrated in the start up ventures I have created⁵. So I have put this idea into practice.

The solutions considered by Picketty were to increase taxes. This increases the size, cost and intrusiveness of government. It is a solution that denies creating firms with the purpose, power and practice to protect and nurture the environment and its bio-diversity in each bioregion of the planet. All these problems can be overcome by introducing a tax incentive to replace shareholders with bio-regionally located citizens. This solution is so simple I will repeat the idea in a different way. A tax incentive can be used to create an equitable and ethical form of ecological⁶ locally owned and controlled time limited corporations that can sustain society for eternity.

³ Picketty, T., (2014), Capital in the Twenty-First Century

⁴ Turnbull, S. (1989), Building sustainable communities: Tools and concepts for self-reliant economic change & Turnbull, S. (1975), Democratising the wealth of nations

⁵ Saxonvale Vineyards Limited founded in 1969, publicly traded 1975; Barwon Cotton Limited founded 1979, became publicly traded in 1984. From 1980 to 1983, Australian Film Underwriters Pty. Ltd., funded documentary films with investor property rights limited to seven years.

⁶ Turnbull, S., (2015), Sustaining society with ecological capitalism

Jurisdictions of the planet that do not limit alien shareholders extracting “unlimited, unknown and uncontrollable” returns are sabotaging the ability the host communities in forming self-financing, self-reliant, self-governing spherical economies. They also deny the formation of ecological corporations capable of becoming agents for protecting and nurturing the planet and its biodiversity that hopefully would still include humans.

Ecological Corporations

The most crucial contribution of ecological corporations is their superior potential to counter the complex interrelated degradation of our planet’s atmosphere, oceans, soils, living things and biodiversity by engaging locally with most of its eight billion citizens. This plague of people on the planet has created a ghastly⁷ predicament. The carrying capacity^{8,9} of the planet is less than two billion¹⁰ humans. Correcting this overshoot¹¹ may take centuries. We need to maintain hope for humanity by demonstrating how survivors can establish humanity for eternity. This possibility has been demonstrated by Indigenous Australians for the last 350 centuries¹². To expedite change and minimize the centuries of ghastly experiences a way of engaging directly and constructively with most of the citizens on the planet is required.

One crucial reason local populations in bioregions of the planet to become directly and democratically engaged in establishing and maintaining their numbers to a level that matches the carrying capacity, is its renewable resources to sustain them in a spherical economy augmented by trade from other spherical economies. This requires a universal wellbeing income to provide the motivation to restrain localised population growth, which works hand-in-hand with education and facilities.

Ecological corporations provide a superior way to directly engage with most of the eight billion individuals on the planet to promote eternal sustainability. No single government, multi-lateral entity, or any other social institution, can provide such comprehensive inclusive bottom-up connections that through trade can reach most citizens of the world independently of the their political system. Informed citizens are being frustrated by the impotence of governments and their multinational institutions to take action other than talk. The laws of nature explain why.

7 Bradshaw, C.J.A. et al., (2021), Underestimating the challenges of avoiding a ghastly future

8 “Carry capacity” can be defined as the maximum population size that an ecosystem can support without being degrade in some fashion

9 Wessesl, T., (2013), The Myth of Progress: Towards a sustainable future

10 Kilvert, N. (2019), So is population or consumption the problem?

11 Dowd, M. (2021), Overshoot in a Nutshell: Understanding Our Predicament

12 National Museum Australia. (2021), Evidence of first peoples

The Law of Nature

A law of nature that is intuitively understandable is that controlling complex problems requires a matching complexity of controllers. This is why all contact sports require equality in the maximum number of individuals allowed in each team. This law of “requisite variety” is why complex organizations formed as centralized command and controlled hierarchies can systemically fail to reliably manage risks. Hierarchical systems of authority, by their nature, inhibit, frustrate, deny and/or punish unspecified behaviour that may be essential for survival. The law or requisite variety is also relevant in assuring the integrity of their communication and control channels.

To obtain reliable and comprehensive data about complex problems a requisite variety of communication channels is required to simply describe their complexity. A variety of channels are also required to allow crosschecking for missing or incorrect data. Likewise, distributed decision-making centers are required to: (a) decompose and so simplify complexity sufficiently for humans to process data understandably and also to (b) cross-check their analysis. Crosschecking is required because different humans will analyse the same data in different ways.

One reason is because all living things are hard-wired by their DNA to possess dual contrary ~ complementary paradoxical behavior¹³ described as “Tensegrity”¹⁴. Such paradoxical “Yan ~ Ying” behavior is another example of the law of requisite variety. It provides all living things with a sufficiently variable repertoire of behaviors to survive birth, thrive and reproduce in unknowable complex dynamic environments. However, such variety is inhibited, frustrated, denied and/or punished in command and control hierarchies.

Organizations also require tensegrity to survive, thrive and/or and adapt in unknowable complex dynamic environments. Existing stakeholder governed firms provide evidence how tensegrity introduces competitive advantages and resiliency to survive business cycles for over half a century. Their bottom-distributed decision-making also illustrate:

- a. what Elinor Ostrom described in her 2009 Nobel Prize acceptance speech as “polycentric governance” and
- b. that polycentric self-governance can be introduced without the need to change corporate laws in major jurisdictions like the UK, Europe and the US.

¹³ Kelso, J.A.S. and Engström. D.A., (2006), The Complementary Nature

¹⁴ Turnbull, S., (2021), How cybernetics explains behavioural tensegrity and its advantages for organisations

A UK example is the John Lewis Partnership. It illustrates how stakeholders can purchase all the shares in a company from its own earnings over 21 years without any tax incentive. A European example is the nested networks of Mondragon stakeholder controlled cooperatives in Spain. They illustrate how stakeholder corporations can grow organically but keep to human scale by dividing into separate organisations that become a supplier or customer firms. A US based example is the VISA card organisation. It illustrates how a publicly listed firm can possess hundreds of boards independently appointed by each stakeholder member banks to control their own credit cards. Like many sporting and civic organization it also illustrates how the some entity can exhibit tensegrity with its stakeholders both cooperating and competing with each other.

But I know of no graduate school of business, management or government providing an education on how to reliably manage the complexity of a business or government agency with a matching complexity of decision-making, communications and control channels as found in the above examples and all forms of life. This intellectual void was recognized by the Academy of Management that held a Caucus at its 81st Annual Conference in 2021 to consider "Education for Managing Existential Risks of Humanity"¹⁵. The AOM has 20,000 members in 120 countries and describes itself as the "preeminent professional association for management and organization scholars".

The social sciences intellectual void could be filled with the knowledge widely available in science and engineering faculties. They provide education on how to design and build self-regulating, self-managing and self-governing automobiles, robots and space exploration vehicles. One problem is that the most prestigious and influential graduate schools of management and their highly distinguished scholars are not aware of what they do not know.

Mainstream management research has mostly been confined to organizations in the public, private and non-profit sectors with a single board with a single CEO managing a command and control hierarchy. These deny the emergent of tensegrity for it to become a topic of research. Management research has been focused on the antithesis of natural systems that possess polycentric governance like our brains that possess a requisite variety of decision-making centers, communication and control channels that continuously compete ~ cooperate. These processes are alien to mainstream social science scholarship and theories of organizations. There has been little need for management research to engage the science of governance¹⁶ that provides a framework evaluating polycentric governance. The science of governance of any specie was established by my PhD research that introduced bytes as the unit of analysis¹⁷.

¹⁵ Details of Caucus, (2021), Education for Managing Existential Risks of Humanity

¹⁶ Turnbull, S., (2002), The science of corporate governance

¹⁷ Turnbull, S., (2000), The governance of firms controlled by more than one board: Theory development and examples

There is also a chicken and egg problem in introducing education for filling the intellectual void of bottom-up management. In 1988 when I asked the Dean of Harvard Business School why it was not taught, he advised me that the market was insufficient.

But times have changed. However, institutions that rely on case studies for educating managers are at a disadvantage since this is a neglected area of scholarship. It was not until Elinor Ostrom, a political scientist, obtained the Nobel Prize in economics in 2009 that most scholars learnt that it was possible to design self-governing institutions and do so without markets or hierarchies¹⁸. Indigenous Australians have practiced bottom-up stakeholder governance to sustain themselves and their environment for over 65,000 years¹⁹. (1844)

Advancing practical action

Our tri-table discussions illustrated the problem of introducing the idea of self-governance to political scientists not familiar with the work of Ostrom. More positively those with an accounting education could readily accept the limitations of accounting doctrines that hid from economists how investors can be overpaid in a manner that is not reported. Political practitioners welcomed the concept of hidden surplus profits that could be used to fund a universal wellbeing income. This was because it overcame the need to raise politically objectionable new taxes to fund a universal income. Instead it introduced a compelling politically attractive reduction in taxes and the involvement of government. An interesting discussion arose from a highly experience insurance practitioner about past practices of forming successive underwriting syndicates every three years being replaced with establishing reserves for ten years. This provided a practical example of the use of investment time horizons and the need to average out risks over good and bad years²⁰.

18 Ostrom, E., (2009), Beyond Markets and States: Polycentric governance of complex economic systems

19 Turnbull, S. and Poelina, A., (2021), How Indigenous wisdom can sustain humanity

20 Please publish your thoughts on this proposal as a posted comment to my article: Tax incentive for investor led stakeholder economy? https://www.academia.edu/61735315/Tax_incentive_for_investor_led_stakeholder_economy Additional details are provided in two short essays: 'De-Tax Yourself To Eternal Wellbeing', at: <https://www.longfinance.net/news/pamphleteers/de-tax-yourself-eternal-wellbeing/> and in my co-authored essay: 'Sustaining humanity and democracy with Indigenous decision-making', <https://www.onlineopinion.com.au/view.asp?article=21687>

Chapter 5

Climate Justice in Consumption Production Systems

By Imaduddin Ahmed, PhD – Academic Board, Paddy Ashdown Forum

Regardless of how much we may want to lay the blame for climate change at the feet of world leaders for failing to coordinate on commitments and make good on previous promises, consumption and production are the drivers of greenhouse gas emissions. Decoupling between emissions and consumption and with production has not yet happened at scale.¹ If democratically elected leaders are failing to sufficiently regulate wasteful consumption and needlessly emissions intensive production, it is because wasteful consumers and inefficient corporations have supported their journey to office. It is because we are not yet ready to give up our red meat-heavy diets or reduce our food waste; because we buy more clothes than we can wear in three weeks of three seasons; because we still use single-use plastics and don't recycle assiduously; because we turn up the heat before we put on jumpers. We value opulence, and yet hardly recognise how decadent and destructive our lifestyles are for others. Our leaders are only reflections of us. If we want to see bolder climate commitments, change begins with the way in which we live.

The day of reckoning is upon us. Do we want more at the expense of others? Or, as consumers, are we prepared to sacrifice what we don't need? As producers, are we prepared to re-evaluate our priorities? Are we prepared to recognise that aspirations to become rich or to value perpetual economic growth for their own sakes are vapid and meaningless pursuits for the vacuous and psychopathic? Or to admit that, in the words of the former General Electric CEO Jack Welch, 'shareholder value is the dumbest idea in the world'? That what we need is to invest more deeply in one-on-one relationships and fostering community, to mitigate suffering, to engage with and nurture nature?

The fate of generations to come, let alone those living in more climate vulnerable parts of the planet, is in our consumption and production patterns. Our consumption and production has already caused much irreversible damage to biodiversity, and little time remains before we arrive at a tipping point of no return with regards to cascading worsening effects. These effects include the thawing of

¹ It has happened in a handful of tax-havens that pass as nation states, and in post-industrial nations that have experienced the productivity gains of a carbon-intensive industrialisation and have now outsourced their manufacturing and territorial emissions (but not consumption emissions) to China and other industrialising countries.

permafrost in the Arctic releasing methane; weakening of the land and sea to act as carbon sinks and instead acting in the opposite way with increased forest fires and increasing bacteria in the ocean producing more CO₂^{2,3}. What this means for Europeans is increased frequency of droughts, floods, increased food insecurity, increased diseases and bacteria, greater risks of injuries and deaths owing to more intense heatwaves and fires, and greater migration to Europe as the poor become poorer in low income countries or altogether lose their nation states under water^{4,5,6}. These are the costs to people as individuals. The costs to people as shareholders, the costs to finance institutions and multinational corporations are the costs of damaged assets and assets that become stranded as a result of new climate legislation or reduced consumer demand for carbon-intensive products. Enlightened European banks have already started estimating their and their clients' value at risk under various temperature rise scenarios, and large companies and financial institutions in the UK will be required to disclose their value at risk by 2025. (It is hoped that other G20 countries will follow suit. Once the financial value at risk to OECD large corporations is known, governments that make efforts to preserve their carbon sinks such as wetlands, mangroves and forests can demand to be compensated for the full value of their services under a structured international framework.)

Many put faith in climate-facing innovation's ability to keep rises in global temperatures within the levels required to prevent tipping points, as well as to make communities more climate resilient. Indeed, a myriad EU institutions have been set-up to this end. Horizon Europe, the Innovation Fund, and Invest EU aim to foster technology that reduces emissions through the product development lifecycle – from proof of concept to pilot, to demonstration and scale-up, helping technologies traverse the "valley of death", to commercial roll-out. Government procurement and publicly financed projects that deploy emissions efficient technology further enhance the commerciality of decarbonising technologies.

Mission-oriented innovation must be a part of the solution. It has shown us multiple pathways to cheap and zero-emission power generation, has shown great potential for a sharing economy for transport beyond that which is publicly provided, and started to demonstrate substitutes for emissions-intensive construction material. Moreover, we need it if we are not to use whatever remaining carbon budget we have on elevating the material living standards of those who do not yet enjoy half the quality of life that we do, materially. Two-thirds of Africans rely on subsistence farming and 600 million people still do not have access to electricity. With an average GDP per capita of \$2,000

2 Berners-Lee, 2019, There is no Planet B

3 Liberal International, 2021, Policy paper on climate displacement

4 Biermann and Boas, 2017, Towards a global governance system to protect climate migrants: taking stock', in Research Handbook on Climate Change, Migration and the Law

5 IPCC, 2018, Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change

6 Liberal International, 2021, Policy paper on climate displacement

(compared to the global average of \$10,500), and a population on course to rise from 1.3 billion to 4 billion in just 80 years, Africa's economy needs to be 16 times higher than it is to bring the average African citizen's quality of life to match the global average⁷. If rhetoric about low-income countries "leapfrogging" the fossil fuel era is not to be empty, it is incumbent on OECD societies endowed with the know-how, resources, and institutions to lead in the development of low-emission and sequestering technology.

But we cannot afford to put all of our stock in that which requires faith. For those of us in OECD societies to continue consuming and producing at our current or increasing rates in the expectation that some technologies will somehow solve our problems at some undefined time in the future is a recipe for disaster. Until we have a technology that removes the current stock of greenhouse gases from the atmosphere – and so far, our best proven technologies are nature based solutions – we have little choice but to decrease our consumption and production, particularly when we think with a more global mind-set. If we have limited income consumption and production aspirations for those with currently lower than average incomes to the global average (rather than the average of OECD societies), we must similarly converge downwards in our consumption and production. This should be possible across sectors of the economy.

Food: Forty-four grams (44g) of protein is required per person per day for healthy living⁸. Yet due to wastage in the supply chain as well as in household waste, we produce 235g of protein per person per day⁹, 154g of which is lost, and 36g of which is gluttony.

First, this implies excess consumption of 84%. **Second**, this implies that 81% of protein is wasted along the supply chain – this represents a massive opportunity for efficiency gains. The greatest gains to be had are in reducing meat intake and the inefficient conversion of crops to protein. Reductions in production of meat will only follow reductions in demand for meat, short of having government regulate meat production.

7 Walsh et al., 2021, A Just Transition for Africa: Championing a Fair and Prosperous Pathway to Net Zero

8 Berners-Lee et al., 2018, Current global food production is sufficient to meet human nutritional needs in 2050 provided there is radical societal adaptation

9 Ibid

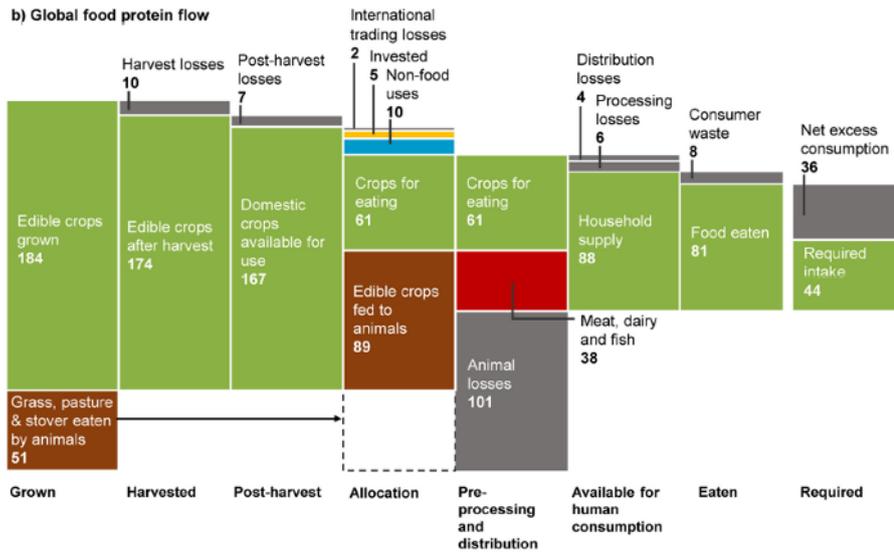


Figure 1 Global food protein flow¹⁰

Additionally, we need to be mindful as consumers that just as we kicked our addiction to hardwood for furniture, so too do we need to reduce our intake of beef, cocoa, coffee, palm oil and soy if we are committed to stopping deforestation and regulating climate change.

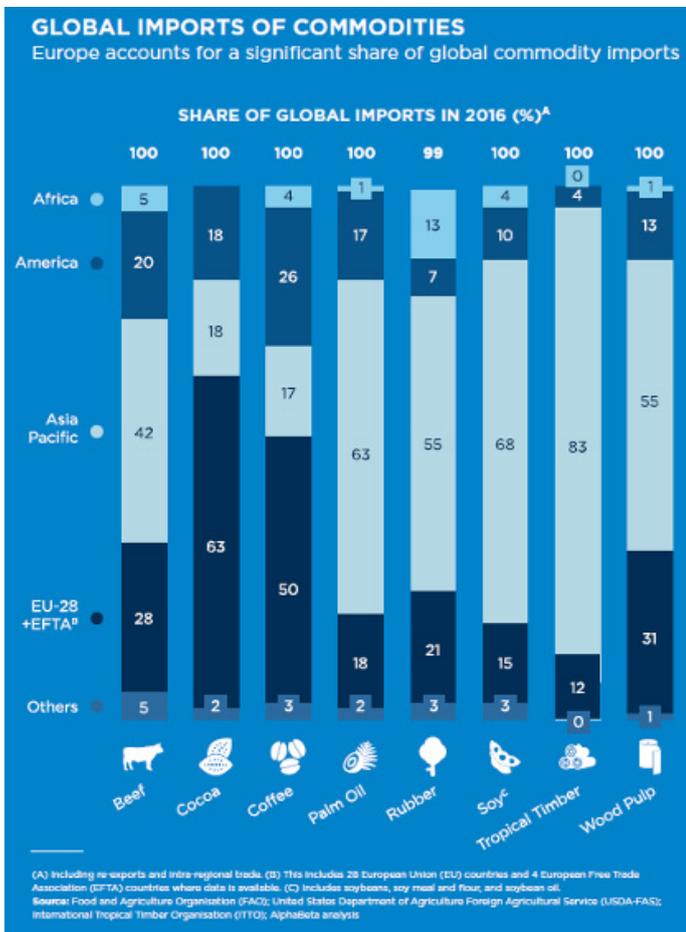


Figure 2 Consumer countries drive deforestation¹¹

Energy: The easiest win in reducing use of fossil fuels and reducing embedded carbon in whatever form of power generation we end up using is to use less energy. Don't use energy when we don't need it, grid operators to reduce transmission losses, and consumers to use more efficient appliances and processes.

In terms of low-emission power generation, and advances in technology that don't yet exist, the way forward must be to ramp-up nuclear power in administrative areas with strong political governance (to prevent bureaucratic incompetence from enabling incidents such as Chernobyl) and which are not prone to natural disasters (such as tsunamis as at Fukushima). The German consumer and electorate's ideological nuclear aversion is not constructive: it increases Germany's already disproportionate contribution to the stock of greenhouse gases through increased dependence on coal in order to assuage anxieties over nuclear meltdowns, which have never had their provenance from within the EU.

Solar and wind can only help to a degree as technology stands, are far from a panacea. Because they are intermittent sources of power, they cannot be dispatched when energy is most demanded, such as evening time (although working from home flattens energy demand in the evening by allowing people to, for example, wash their clothes during the day.)

¹⁰ Berners-Lee et al., 2018 (IDH, 2020)
¹¹ IDH, 2020

- Power storage using batteries using current technology contains a lot of embedded carbon (as do solar photovoltaic panels and wind turbines which have relatively short lifespans), and there are physically not enough minerals on earth to supply the volume of batteries required to fulfil current energy needs with just solar and wind.
- Solar and wind could be used in combination with hydropower dams to store excess solar and wind energy, but again low-emission, climate-resilient hydropower is in limited supply. Depending on the conditions around a reservoir (fluctuations in depth, surface area, soil, underlying vegetation, temperature), hydropower can be multiple times worse in terms of global warming potential through methane emissions from decomposing vegetation than coal^{12,13}. Hydropower reservoir capacities worldwide are also becoming decreasingly dependable due to increasing incidents and intensities of drought due to climate change¹⁴.
- A third solution for making use of solar throughout the day is Indian prime minister Narendra Modi's vision of "One world, one sun, one grid". It is yet to be demonstrated that the embedded carbon and lifespan of transmission infrastructure required to connect countries spanning the world would reduce the carbon emitted from alternative models of power generation on a lifecycle assessment basis.

Materials: Steel, aluminium, cement, plastics, ethyl alcohol, and ammonia production are emissions-intensive materials that provide construction materials, packaging and food security. The way forward with reducing emissions from these from a European perspective is not to simply outsource their production to China, where there is no way to oversee whether these materials are produced as carbon efficiently as possible. With a nod to Wood Plc's SCORE (Substitute, Capture, Off-set, Reduce and Evaluate) decarbonisation framework¹⁵, the way forward is to:

- 1. Reduce** consumption wherever possible. This includes housing procurement authorities, developers and lenders NOT automatically replacing energy inefficient buildings with new ones or building new cycle lanes and wider footpaths (unless these are built using natural materials) in place of roads. Lifecycle assessments MUST be carried out so that they take into account the upstream emissions of manufacturing, transporting and installing construction materials, and compare the lifecycle emissions with simply retrofitting or repurposing what is already in place, whose embedded carbon is a sunk cost.

¹² Ocko and Hamburg, 2019, Climate Impacts of Hydropower: Enormous Differences among Facilities and over Time

¹³ Ahmed, 2021b, Why Zambia's System of Energy Provision Did Not Prevent the Power Outages of 2015 and 2016', in The Political Economy of Hydropower Dependant Nations

¹⁴ Ahmed, 2021a, The Political Economy of Hydropower Dependant Nations - A Case Study of Zambia

¹⁵ <https://www.woodplc.com/solutions/expertise/a-z-list-of-our-expertise/decarbonisation-score#:~:text=What%20is%20your%20decarbonisation%20SCORE,lead%20to%20a%20successful%20outcome>.

At the consumer level, reduction in consumption includes shifting from a culture of giving material gifts to a culture of giving low-emission experiences, as well as welcoming a culture of giving second-hand gifts, such as clean

and functional baby toys. Similarly, we should welcome the sight of mended socks when friends visit, rather than seeking to replace every holey pair. The aim should be to prolong the useful lives of goods we tend to discard for as long as possible before repurposing or recycling component parts into a more circular economy; there is no reason why this shouldn't open up a new industry and create new jobs in mending, repurposing and finally recycling.

2. **Substitute** energy-intensive materials where the less-intensive alternatives can serve the same purpose. EarthEnable¹⁶ in Rwanda has effectively replaced cement floors for its customers with floors made by compressing different layers of natural materials and sealing them with a new and cheap waterproof oil developed by a California-based biochemist at a fraction of the cost. Similarly, where manufactured fertilisers and pesticides can be replaced through job-creating and organic practices that can deliver food security, they should be. Organic practices can include the use of denser hedgerows and woodlands nurture biodiverse wildlife that prey on pests; the use of poly-cropping to introduce greater climate resilience between complementary crops; and to also allow nitrogen-fixing legumes to grow alongside cereals; the use of natural compost.
3. **Capture** emissions where the manufacturing of emissions-intensive materials is unavoidable. This means deploying expensive carbon capture, use and storage technology, and being prepared to pay the premium for it.
4. **Off-set** the remaining fugitive emissions from the manufacture of the emissions-intensive materials. This can be done by supporting wildlife such as whales and elephants that sequester carbon, supporting the proliferation of mangroves, paying the government of net-negative Gabon for preserving its rainforests, or supporting poor cocoa farmers in Cote d'Ivoire, beef-farmers in Brazil or palm-oil farmers with more sustainable livelihoods that do not involve deforestation.

Transport: Systems-thinking in the construction of rail between hubs and between underserved areas will enable greater mobility and substitution away from fossil-fuel driven road and short-haul air transport. An increased proliferation of vehicles using the sharing economy business model of Zipcar where cars are available at multiple locations will reduce the stock of infrequently used vehicles on the road, and hence the embedded carbon – electric vehicles on their own are not a panacea for decarbonisation given the high associated carbon costs of manufacturing them. Ring-fencing finance for electric vehicle batteries, accompanying electric

¹⁶ <https://www.earthenable.org/our-floors/>

vehicle sales, so that they are payable on a pay-as-you-go-basis as petrol would be, together with a proliferation of charging stations particularly in rural areas, will enable the uptake of electric vehicles. A lot of transport planning falls within the purview of competent local authorities as well as ministries, rather than world leaders; others fall within the purview of entrepreneurs.

We cannot bank on technologies that do not exist. We must start coming to terms with the fact that in to live more sustainable lifestyles, we will need to live frugally. At the same time, new generations of graduates must also think about how they can change the paradigms of the marketplace to deliver low-carbon goods and services as they think about how to make their living. And here I leave them with an excerpt from a graduation speech given a generation ago by Maxine Hong Kingston at UC Berkeley: "Making a living". Isn't that a beautiful phrase? A gerund, a verb form, an idiom made of two verb forms. Not a definitive once-and-for-all dead-end noun like "money" or "job" [...] You create and make up new jobs that are good for a human being. You alter a cramping job so that it supports your humanity and spirit and changes the marketplace [... Your] graduation is not the beginning or the end. In Native American cultures, the questing hero or heroine sees a vision, then brings it back as a story, a song, a dance, a weaving pattern, a painting, or a map to give to his tribe. [G]raduation is the middle of the quest. Now you take the knowledge and make sense of it, create its practical applications, invent human uses for abstractions, and bring gifts home to us, your community.'

Chapter 6

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Chapter 2 - Justice in Consumption Production Systems - People

Additional information:

- There were accusations that COP26 was heavily influenced by big corporation lobbies and fossil fuel industry interest groups.
- At the time of COP26, organisations like BP and Shell announced billions in profits as a result of surging oil prices.
- World leaders, who, arguably did not need to fly to the conference, did, in fact, fly to Glasgow.
- Not everyone wore a mask when it was prudent and, possibly, required, to do so.
- Access for disabled people was inadequate, leading to the Israeli energy minister, Karine Elharrar, being unable to attend the conference in person on the first day.

- There was a lack of British Sign Language interpreters and subtitles to enable deaf people to stay up to date with the speeches of world leaders at the conference.

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