Blueprint Series 2019-2021

Blueprint 6: Sustainable Finance

Systemic Transformation to a Regenerative & Distributive Economy

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r3.0
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0. FRONT MATTER

0.1. EXECUTIVE SUMMARY

The goal of creating Sustainable Finance is predicated on the assumption that we currently live in an unsustainable Finance regime. Empirical evidence – such as the Planetary Boundaries, Doughnut Economics, Ecological Footprint, and Great Acceleration research streams – substantiate systemic unsustainability as fact. Indeed, our current system is best defined as inhabiting advanced stages of overshoot-and-collapse. So clearly, transformation is required, if humanity wishes to create a truly sustainable finance system that can fuel the transition to a Regenerative & Distributive Economy.

The fundamental question this Blueprint asks is: do current Sustainable Finance initiatives set us on a path of transformation to such new and sufficient finance and economic systems?

The fundamental answer: A resounding no.

So, this Blueprint has its work cut out for it, to propose an alternative pathway that shows promise of achieving bona fide Sustainable Finance.

This report explores this transformative agenda by following the standard practice r3.0 established with its five previous Blueprints (on Reporting, Accounting, Data, New Business Models, and Transformation): assess current practices and ambitions in the field, compare them to what science and ethics dictate is necessary to achieve sustainability (and beyond), and make recommendations on how to fill any gaps.

So, Chapter 1 commences by first laying out the fundamental role of Finance, then turns to identifying the shortcomings of the Finance field’s structural reliance on perpetual growth and debt. The report further solidifies its foundations by summarizing two significant critiques of Finance from the Capital Institute: the five Fatal Flaws of Finance posited by John Fullerton, and the broader Cultural Evolution of Economics presented by Joe Brewer.

In Chapter 2, the Blueprint narrows its focus from Finance broadly speaking, to Sustainable Finance specifically, first defining the normative characteristics of the field based on scientific understanding and ethical imperatives. The report then summarizes its in-depth assessment (included in full as Annexes) of a host of “Sustainable Finance” initiatives, which it finds all fall far short of what science & ethics say is necessary to steer the Finance system back within sustainability thresholds (ecological ceilings and social foundations).

Chapter 3 acknowledges that triggering necessary transformation to Sustainable Finance requires fertile foundational conditions, so it advances a series of Enabling Factors in the form of fundamental Principles drawn from r3.0 and its partners.

- Eight Principles of a Regenerative Economy (Capital Institute)
  - Based on universal patterns of living systems
- Nine Disclosure Principles of a Regenerative & Distributive Economy (r3.0)
  - Based on best practices in disclosure and transparency
- Eight Principles for Governing a Commons (Elinor Ostrom / David Sloan Wilson)
  - Based on Nobel Prize in Economic Sciences research
- Nine Elements of Civic Fiduciary / Equity Culture (Marcy Murningham)
  - Based on action research at the intersection of fiduciary duty & beneficiary interests
Chapter 4 introduces the recognition that transformation to Sustainable Finance requires galvanizing stimulation encapsulated in a set of Activation Factors that have gestated since the initial conception of this Blueprint. The "litmus test" for each Activation Factor is whether it liberates energy toward regenerative and distributive finance. To help frame this Blueprint, we categorize these Activation Factors into four clusters, starting with a foundational Scope cluster framed around a 3-dimensional axis of Asset Sustainability (Vertical Axis), Holistic Asset Inclusion (Horizontal Axis), and Asset Regeneration (Longitudinal Axis).

- **Scope**
  - From ESG Integration to Threshold Investing (Vertical Axis)
  - From Monocapitalism to Multicapitalism (Horizontal Axis)
  - From Impact Valuation to System Value Creation (Longitudinal Axis)

- **Policy & Governance**
  - From Fiduciary Duty to Strategic Duty
  - From Alpha Generation to Beta Activism
  - From Dirty Lobbying to Positive Lobbying

- **Engagement**
  - From Tea & Biscuits Engagement to Forceful Stewardship
  - From Competitive Advantage to Collaborative Advocation

- **Practice & Performance**
  - From Scenario Analysis to Transformation Planning
  - From Outside-In Enterprise & Portfolio Risk to Inside-Out Systemic & Existential Risk

Ultimately, triggering these Activation Factors alone will create necessary but not sufficient change, because they operate within the context of the existing finance and economic systems. For a truly Sustainable Finance System, a transformation to a truly Regenerative & Distributive Economic System is required.

Chapter 5 establishes the terms for necessary transformation, and proposes a set of Transformation Factors needed to shift to new financial and economic paradigms. Given that the overall study of transformation is still emerging, these Transformation Factors a preliminary iteration, and invite further collaboration to develop thinking. These Factors fall into two broad categories: Foundational, or overarching factors, and Functional, or factors that apply to a domain:

- **Foundational**
  - Holism
  - Economies as Ecosystems
  - Regeneration

- **Functional**
  - Multiscale (Bioregional)
  - Post-Growth
  - Mutualism
Chapter 6 presents a series of "general specification" Recommendations that invite the full complement of constituencies in the Finance ecosystem (the Direct and Indirect Actors listed in the Audience Chapter) to build upon with implementable solutions. The Recommendations are cover all three levels of Factors: Enabling, Activation, and Transformation.

**Recommendations**

- **Enabling Factors**
  - **Framing Enablers**
    - Eight Principles of a Regenerative Economy: Apply the eight Principles of Regenerative Economics to align the design of financial systems with living systems dynamics.
  - **Process Enablers**
    - Eight Principles for Governing a Commons: Integrate the eight Principles for Governing a Commons into the foundational structure of finance systems.
    - Eight Elements of Civic Fiduciary / Equity Culture: Apply the elements of Civic Fiduciary / Equity Culture as a complementary means of enhancing the Commons.
• Activation Factors
  o Scope
    □ From ESG Integration to Threshold Investing: Align investment and finance systems with ecological and social thresholds that define a safe and just operating space for life on earth.
    □ From Monocapitalism to Multicapitalism: Assess impacts of finance in the context of the carrying capacities of the capitals as a means of supporting the paradigm shift to Multicapitalism.
    □ From Impact Valuation to System Value Creation: Assess System Value Creation, focusing on the sustainability of ecological and social impacts, before applying Impact Valuation.
  o Policy & Governance
    □ From Fiduciary Duty to Strategic Duty: Campaign to redefine Fiduciary Duty to align with beneficiaries’ strategic best interests, namely, long-term System Value creation.
    □ From Alpha Generation to Beta Activism: Abandon Alpha as the measure of investment success, and replace it with Beta Activism, or advocacy for healthy markets.
    □ From Dirty Lobbying to Positive Lobbying: Shift the orientation of lobbying from entrenching negative effects, such as exacerbating climate change, to supporting positive transformations, such as supporting climate action.
  o Engagement
    □ From Tea & Biscuits Engagement to Forceful Stewardship: Adopt an assertive stance of Forceful Stewardship through industry-scale engagement to shift entire sectors toward sustainability.
    □ From Competitive Advantage to Collaborative Advantage to Collaborative Advocation: Recognize the merging of self-interest and collective interest when risks become systemic and existential, thus calling for joint advocacy for new operating system constraints aligned with ecological and social thresholds.
  o Practice & Performance
    □ From Scenario Analysis to Transformation Planning: All finance actors produce specific plans for transformation in response to emerging realities, and compel the entities they finance to do the same.
    □ From Outside-In Enterprise & Portfolio Risk to Inside-Out Systemic & Existential Risk: Expand risk radars to encompass both outside-in and inside-out risk horizontally, and vertically extending to include systemic and existential risk.
• Transformation Factors
  o Foundational Transformation Factors
    □ Holism: Base economic and finance system design on holism, recognizing the inherent interconnectivity of complex adaptive systems.
    □ Economies as Ecosystems: Design economies as ecosystems, following the principles that govern all other living systems.
    □ Regeneration: Adopt regeneration as the general specification for economic and finance system design, embracing sustainability as the baseline.
  o Functional Transformation Factors
    □ Multiscale (Bioregional): Adopt the bioregion as the locus of attention for scale-linking transformations up and down.
    □ Post-Growth: Shift to Post-Growth strategies that satisfy the core needs of all living beings within the carrying capacities of resource bases.
    □ Mutualism: Actively dismantle dominance-based economic and finance systems, replacing them with mutualistic economies and finance systems.
Chapter 7 provides concise Conclusions.

Chapter 8 consists of the Annexes that include the full assessment of existing Sustainable Finance initiatives, identifying their shortcomings and gaps. It also lists the Working Group Members who vetted the Exposure Drafts of this report, providing expert input and guidance. Finally, it provides information on r3.0 (Redesign for Resilience & Regeneration) and the Lead Authors.

0.2. BACKGROUND ON THE R3.0 BLUEPRINT PROCESS

This Blueprint is the sixth in the r3.0 series, and the first of four in the Second Phase of Blueprint development (2019 – 2022). As a global common good, pre-competitive, market-making not-for-profit organization, r3.0 has created a templated process for creating Blueprints in diverse fields that identify 1) current practice and 2) current ambition in the field in question, then compare this practice and ambition to 3) necessary ambition (based on science and ethics) for spurring the emergence of a Regenerative & Distributive Economy.

In other words, the Blueprints conduct gap analyses. The Blueprints then backcast\(^1\) from the desired future on the far side of the gap to proposes a set of Recommendations of hands-on approaches that different actors can take to fill the gaps, thus building foundations for the sustainable structures of a new economy.

r3.0 piloted this process in a First Phase (2015 – 2019), including Blueprints on 21\(^{st}\) Century Reporting, Accounting, Data, and New Business Models, plus a fifth Transformation Journey Blueprint that synthesizes these first four into an implementation framework to trigger necessary transformation. The Second Phase covers the fields of Sustainable Finance, Value Cycles, Governments / Multilaterals / Foundations, and Educational Transformation.

0.2.1. BLUEPRINT DUE PROCESS

The templated Due Process r3.0 has centers around a Working Group (WG) of 20-40 global experts that gathers for a 12-month development process of vetting Recommendations and the Blueprints overall, inviting input at several critical moments:

- **Draft Content Index:** r3.0 authors draft a Content Index to introduce the key concepts to be covered, as well as the overall structure and scope of the Blueprint, with WG members assessing for focus and completeness; WG members also indicate special interest areas and suggest materials for the literature and practice review.

- **Exposure Draft One:** r3.0 authors then produce a first full Exposure Draft, which WG members evaluate through two types of convenings:
  - **In-Person Meeting One:** WG members who can attend meet face-to-face to discuss the First Exposure Draft, providing critical early feedback on direction.
  - **Virtual Dialogue:** All WG members are invited to a one-week, asynchronous virtual dialogue hosted on the Current online engagement platform, where they engage via text commentary through a set of prompts for critical feedback.

- **Exposure Draft Two:** taking into account feedback from the first In-Person Meeting and Virtual Dialogue, r3.0 authors produce a second Exposure Draft that introduces the formal Recommendations, which is exposed to two forms of formal input:
  - **In-Person Meeting Two:** a second In-Person Meeting takes place, typically on a different continent from the first In-Person Meeting to enhance geographic diversity, to prepare the Blueprint for final publication.
  - **Public Comment Period:** The second Exposure Draft is released publicly for a one-month Public Comment Period, enabling both formal and informal input opportunities.

- **Final Blueprint:** A final version of the Blueprint is released at the annual r3.0 Conference, and made freely available on the r3.0 Website.
0.2.2. BLUEPRINT / TRANSFORMATION JOURNEY PROGRAM INTERRELATIONSHIP

In 2018, r3.0 introduced the Transformation Journey Program (TJP) as a series of 4 two-day workshops built on a curriculum developed from the Transformation Journey Blueprint, and piloted three TJP’s – in Amsterdam, Boston, and Rotterdam. Two of the pilot TJP’s (hosted by ING in Amsterdam and by John Hancock / Manulife in Boston) focused on Sustainable Finance, as a pre-step toward this Sustainable Finance Blueprint.

Participants in the Amsterdam and Boston TJP’s provided first-pass input on current practice and ambition in the field of finance as it relates to sustainability, and initial validation of provisional gap analyses compared to the “necessary” definition of sustainable finance if it is to truly contribute to the emergence of a regenerative and distributive economy. In particular, participants assessed the pace, scale, and scope of necessary transformation in the finance sector in order to align with sustainability. This expert input provides a pre-foundation for this Sustainable Finance Blueprint.

0.3. AUDIENCE

As with all r3.0 Blueprints, the primary output is a set of Recommendations that apply across-the-board. Different audiences are then invited to translate these into their specific Targeted Recommendations. To support understanding of the latter, this Blueprint introduces here at the outset a typology of the audience to whom the Targeted Recommendations may be addressed.

To cast a wide net that integrates all key elements of finance, let us turn to Keith Ambachtsheer, a leading expert on pension funds and institutional investment, who proposes a framework of finance by asking us to “think of a mental ‘finance’ filing cabinet with five drawers”:

1. **Primary Investing by directly transforming financial capital into productive capital**: this can be done through turning societal savings into debt and equity capital provision, through credit creation, or through reinvesting corporate profits back into the business.

2. **Secondary Investing by holding outstanding issuer bonds and stocks**: this is increasingly done institutionally by long-term investors such as pension funds, sovereign wealth funds, endowments, insurance companies, and some asset management organizations. However, there continue to be large cohorts of short-term investors (Keynes called them ‘speculators’) in the retail investor, asset management, and hedge-fund sectors.

3. **Price Discovery and Liquidity Provision**: financial markets price future cash-flows and facilitate the acquisition and disposition of financial instruments by individuals and institutions.

4. **Risk Management**: through the provision of mortality, longevity, property, and casualty insurance, and through the creation of various derivative instruments (puts, calls, futures contracts) in a long list of financial and commodity markets.

5. **Financial Infrastructure**: such as payment mechanisms, regulatory and central banking facilities, financial disclosure protocols, non-government organizations with a finance focus, and academia through its finance teaching and research functions.2
In the Virtual Dialogue on the First Exposure Draft of this Blueprint, Working Group Member Tim MacDonald proposed a set of channels for Finance (in bold below), with corresponding moral codes (capitalized in italics below):

I suggest that all Finance has common interest at heart, but different channels of finance have different moral codes hardwired into them by which they recognize what is and is not in the common interest. Today there are six different and unique channels of Finance through which we aggregate surpluses saved by individuals, and deploy those aggregations as investment in enterprise. Each of those different channels has its own unique moral code by which it recognizes common interests. They are:

- **Family & Friends**, as a channel for aggregating surpluses saved to care for our own, that recognizes the common interest in **IMPACT** (however that may be defined, unique to each Family Office or friends networks) and makes investments through patronage (in whatever structure fits: grants, loans, shares or formula-based sharing in free cash flows) of enterprises that have the right impact;
- **Church & Philanthropy**, as a channel for aggregating surpluses saved to care for others, that recognizes the common interest of **MISSION** (as each such channel defines its own mission) and makes investments through grants to enterprises that advance that mission;
- **Taxing & Spending**, as a channel for aggregating surpluses saved (forcibly, by law) to contribute to the costs of public health, public safety and the public welfare, that recognizes the common interests through **POLICY** and makes investments through subsidies to enterprises that implement those policies;
- **Banking & Lending**, as a channel for aggregating surpluses saved to manage our individual cash flows, that recognizes the common interest through **PROFITS** and makes investments through credit extended to enterprises that are making a profit (or that own collateral that can be sold at a profit over the amount loaned);
- **Exchanges & Funds**, as a channel for aggregating surpluses saved to opportunistically and idiosyncratically put money to work making more money, that recognizes the common interest as **PROGRESS**, and makes investments through speculation on shares of standard form investment contracts with enterprises that are helping us to progress towards a future of more that is better for more; and
- **Pensions & Endowments**, as a channel for aggregating surplus saved to programmatically provide certainty against certain of life’s uncertainties, that recognizes the common interest as **PEACE**, earth peace and people peace, the peace of sufficient surpluses circulating sufficiently, and makes investments through formula-based sharing in enterprises that foster and promote peace through social and environmental justice in the conduct of commerce.

When all of these channels are functioning correctly, according to their design, we prosper in peace. When any one of them falls into dysfunction, we get a false prosperity that does not bring peace. Today, Finance is dysfunctioning, and we do not have peace. Not with the earth. Not with each other. Not with our future.

Drawing on this Typology and Channels of Finance, this Blueprint proposes the following Typology of Audience for Finance, who we invite to translate the general specification Recommendations in this Blueprint into implementation specifications for their constituencies:
Direct Actors:

- **Asset Owners**
  - Fiduciaries (and Superfiduciaries)
    - E.g., pension funds, endowments, foundations
  - Sovereign Wealth Funds
  - High Net Worth Individuals/Family Offices
  - Institutional Investors
  - Individual investors

- **Asset Managers**
  - Mutual Funds
  - Hedge Funds
  - Investment Banks
  - Corporate Finance
  - Private Equity
  - Venture Capital

- **Asset Producers**
  - Corporates
  - Real estate
  - Agriculture

- **Equity**
  - Buy side
  - Sell side

- **Debt**
  - Banks
  - Central Banks

- **Insurers (including Reinsurers)**

- **Intermediaries**
  - Brokerages
  - Payment Processors
  - Investment Consultants

Indirect Actors:

- **Multilaterals**
- **Stock Exchanges**
- **Information Technology**
  - Data Providers
  - Blockchain
  - Fintech

- **Governments**
  - Legislators
  - Regulators
  - Adjudicators

- **Analysts**
  - Investment
  - Sustainability

- **Accountants**

- **Disclosure Standards & Frameworks**

- **Raters & Rankers**
  - Credit Rating Agencies
  - Sustainability Raters & Rankers

- **Second-Order Intermediaries**

- **Academics**

- **Non-Governmental Organizations (NGOs)**

- **Journalists**
1. INTRODUCTION

All such expert communities are prone to what the French call deformation professionelle and the German Betriebsblindheit. Expressed in plain English, experts tend to establish a peer world-view which becomes ever more rigid and focused. Yet the crucial insights regarding the issue in question may lurk at the fringes... This is particularly true when the issue is the very survival of our civilization, where conventional means of analysis may become useless. 

Hans Joachim Schellnhuber, Foreword, What Lies Beneath, August 2018

If you really understood the situation and still kept on failing to act, then you would be evil. And that I refuse to believe.

Greta Thunberg, United Nations, 23 September 2019

Sustainability is the possibility that humans and other life will flourish on the Earth forever.

John Ehrenfeld, Flourishing, 2013

The question this Blueprint asks is, how do we know when finance is sustainable? And by sustainable, the Blueprint invokes its most elegant definition that venerable elder John Ehrenfeld offers as a kind of koan: a string stretched between two poles so taut it could snap at any moment – or, continue to hold perpetually.

One pole is the enticing notion of flourishing forever; the other, its inherent impossibility on an Earth as mortal as we are. Strung between is humanity’s pursuit – like a tight-rope walker – of these intertwined possibilities: sustaining flourishing.

In his discussion of this definition, Ehrenfeld pulls the line tighter by pointing out the inherent tension in its present uses:

Sustainability is both a badly misused and abused term. It’s misused when those who speak it and act in its name do not understand what it means. It’s abused when it is used by agents that know they do not understand it, but use it as an attempt to fool others into thinking that they do.

Extending the elder’s logic, younger climate striker Greta Thunberg proposes a third option: knowing the meaning, and acting against it anyway. To fathom this possibility, though, requires that we admit a tear in our moral fabric – the enactment of evil under the guise of sustainability.

There is, of course, a fourth and more enlivening option, which is precisely what this Blueprint concerns itself with: understanding sustainability, and working to enact it – and, indeed, go past it – to flourishing, for all, forever. By necessity, it also concerns itself with discerning if current claims of Sustainable Finance actually amount to misuse or abuse (or even evil). We find precious little evidence of the fourth option in action, with almost all evidence pointing to the other three options (of course we can’t say which is which amongst them; only the actors themselves can.)
And as the eminent elder climate scientist Schellnhuber reminds us, discerning between the first three and the fourth falls by necessity on those who aren’t advancing the first three (as these actors are, by definition, either blind, or compromised, or immoral, and hence incapable.) The r3.0 network, comprised as it is of Positive Mavericks who “think independently, challenging personal and institutional constraints, structural limitations, unconscious biases and shadow agendas” and “maintain persistence despite widespread resistance to a transformative agenda and active hope in the face of planetary and societal collapses,” is uniquely positioned to cast light on Sustainable Finance. (See Figure 2)

**Positive Mavericks**

- Work constructively (not destructively) toward positive change;
- Think independently, challenging personal & institutional constraints, structural limitations, unconscious biases & shadow agendas;
- Backcast from a desired future, building bridge foundations on the far side of the river and spanning backwards to meet the present;
- Catalyze transformation from the foundations of incremental change;
- Act at the pace, scale, and scope dictated by science & ethics;
- Think and act at systems levels, making nano / micro / meso / macro links;
- Work collaboratively in ne(x)works, dispelling the illusion of separation;
- Maintain persistence despite widespread resistance to a transformative agenda & active hope in the face of planetary & societal collapses.

**Figure 2: Positive Mavericks**

1.1. **THE ROLE OF FINANCE**

*How do you go bankrupt? Two ways: gradually, then suddenly.*

Ernest Hemingway, *The Sun Also Rises*, 1926

“[F]inance is not about making money... finance is about creating the wherewithal for human activities,” stated Nobel Laureate Bob Shiller in a 2014 Yale dialogue. He continued:

“We’re interconnected. Every valuable activity is interconnected...finance is really the theory about making those [valuable activities] happen. So in my view ... the theory of finance is a central underpinning of our theory of society. We are a financial society. Just about anything important that happens is financed, and it involves people who are trained in finance.”

In other words, finance underwrites meaningful human life, in this Nobel Laureate’s theories of finance and society – elevating the role of the agents of finance to a most noble role.

But is that role necessarily noble (as Shiller suggests)? If finance has the power to underwrite human life, so too must it have the capacity to undermine human existence – depending on how it’s employed. The underlying question, then, is whether financial markets serve as forces of good or evil in society, as Jane Mendillo, then-CEO of Harvard Management Company (that oversees Harvard University’s endowment, which was $36 billion then) interpreted a prompt in the same dialogue. “I would be very firmly on the side of good versus evil,” she said. “[I]n a normal, functioning market ... [f]inance works” – or, serves as a force of good.
Does the evidence bear out these optimistic assessments? Proceeding from Shiller's theory of finance (that it "creates the wherewithal for human activities"), the question arises whether these financed human activities add up to good or ill, in their global totality. In our transition from the goldilocks epoch of the Holocene into the Anthropocene, when humanity exerts planetary, geologic-scale impact, the scales have tipped decidedly toward overall ill, requiring a radical realignment.

A comprehensive review of the science on humanity's impacts on the planet's carbon cycle and climate regulation system, such as the one conducted by Professor Jem Bendell in 2018, yields a determination to "interpret the information as indicating inevitable collapse, probable catastrophe, and possible extinction." A similar survey of current climate science by Ian Dunlop and David Spratt in 2018 confirms that we are courting "existential climate risk" – or climatic transformations that threaten the continued existence of human civilization, and even humanity as a species. And annual Ecological Footprint analyses by the Global Footprint Network find that humanity has been in "earth overshoot," where we use more natural resources than the earth can regenerate (and create more waste than it can assimilate), every year since 1970 – right about the time that the systems science computer modeling of Donella Meadows and her colleagues told us we were bumping up against our "limits to growth." (See Figure 3)

Such systemic overshoot eventually leads to inevitable collapse, as William Catton explains in his 1980 book, *Overshoot*:

Human beings, in two million years of cultural evolution, have several times succeeded in taking over additional portions of the earth's total life-supporting capacity, at the expense of other creatures. Each time, population has increased. But man has now learned to rely on a technology that augments human carrying capacity in a necessarily temporary way – as temporary as the extension of life by eating the seeds needed to grow next year's food. Human population, organized into industrial societies and blind to the temporariness of carrying capacity supplements based on exhaustible resource dependence, responded by increasing more exuberantly than ever, even though this meant overshooting the number our planet could permanently support. Something akin to bankruptcy was the inevitable sequel.
And as Ernest Hemingway noted in The Sun Also Rises, one goes bankrupt in two ways: "gradually, then suddenly" (following in the steps of Seneca, who held that "fortune is of sluggish growth, but ruin is rapid.") Ugo Bardi calls this the "Seneca Effect," and notes that in the universe, "collapse is not a bug, it is a feature." (See Figure 4) So the clear message here is that aggregate human activity, which (as Shiller tells us) is fueled by finance, is overshooting the earth’s natural carrying capacities. In this sense, finance is not a force for good, but rather it is the very "technology" that holds a gun to our heads.

![Figure 4: The Seneca Effect](image)

But again, whether finance exerts a net sum negative or net sum positive impact is variable. So we could, ostensibly, steer the very "technology" that imperils us – namely, the finance that fuels human activity’s collective impact – toward "saving" ourselves instead. Indeed, the very essence of the Anthropocene suggests that we can consciously lay our hand on the scales to tip them in our favor. We are of Gaia, after all, and thus part of a self-regulating system that naturally seeks equilibrium, so we have the wherewithal to steer aggregate human activity toward planetary-scale regeneration. We simply need to install a financial operating system bound by the sane constraints of a "safe and just operating space for humanity."  

**1.2. CRITIQUES OF FINANCE**

Significant critiques of finance abound. For the purposes of this Blueprint, we will summarize a few of these critiques, in order to establish the problematic nature of finance as currently conducted, and to set the stage for potential lines of transformation toward finance that is truly sustainable. We start with two broad critiques – of growth and debt – and then delve into two more detailed critiques, by Joe Brewer and John Fullerton, of the Capital Institute.

**1.2.1. GROWTH**

*Don’t let anyone distract you from the work at hand, which is economic growth.*

William Nordhaus, to his Yale students, upon learning he won the 2018 Nobel Prize in Economics

*Sustainable growth is, of course, a clear contradiction in as far as any truly long-run material growth is concerned (I am ignoring any possibilities of migrating to other planets after we have exhausted the Earth’s resources) and it is highly doubtful that we can keep on improving such intangibles as happiness or satisfaction.*

Vaclav Smil, Growth: From Microorganisms to Megacities, 2019
Perhaps the best way to illustrate the stranglehold that the imperative of economic growth holds on the current collective consciousness is the fact that “the first recorded mention [of the] idea of two degrees as the safe threshold for warming [was] by economist William Nordhaus in 1975.”22 After a decade-and-a-half of gestation in the scientific community, a 1990 Stockholm Environment Institute study cemented this 2-degree limit as the uppermost safe threshold for global warming, a consensus that held for the next quarter century.23

Fast forward to 2018: on the very same day that the Intergovernmental Panel on Climate Change (IPCC) released its special report revising the threshold downward from 2C to 1.5C, the Royal Swedish Academy of Sciences awarded Nordhaus the Nobel Prize in Economic Sciences “for integrating climate change into long-run macroeconomic analysis.” In his Nobel lecture, Nordhaus presented an “optimal” scenario of stabilizing global temperature at about 3.5C – increasing his former stance by the entire amount now advised by IPCC (see Figure 4).

*Temperature trajectories in different policies*

What’s behind Nordhaus’ 1.5C upward revision? Economic Growth Theory. Nordhaus’ thinking is axiomatic: economic growth is a given, so we should postpone expensive climate solutions until future generations can better afford them (applying a 3 percent Social Discount Rate), thus achieving an “ideal” balance of economic impacts against climate change impacts. This approach assumes linear developments (*the future will be like the past*) in a world where non-linear dynamics also exists: the whole idea behind a climate threshold is that tipping points of rapid and disruptive change can kick in when a threshold is crossed.

This disparity between proposed thresholds resulted in the surreal outcome. The day after the concurrent IPCC and Nobel announcements, Institute for Energy Research Senior Economist Robert Murphy opined that the “IPCC should heed the work of Nobel Laureate William Nordhaus,” which shows that the recent goals announced by the IPCC are ludicrously aggressive, and would likely cause far more damage to economic growth than they would alleviate in terms of climate change.27
Pause for a moment to reflect on this juxtaposition. The author asks the global body of climate scientists, which bases its stances on scientific understanding of biogeochemical realities dictated by thermodynamic laws in order to "preserve a planet similar to that on which civilization developed and to which life on Earth is adapted," to defer to a single economist, who bases his stance on modeling of economic systems created by humans. And what does the author seek to alleviate? The suffering of climate refugees? The loss of diverse plant and animal species? The assault on the integrity of the biosphere? No, he seeks to alleviate "damage to economic growth."

To illustrate the difference, it makes sense to assess the scientific projections for various thresholds (thanks to CarbonBrief, which extracted data from around 70 peer-reviewed climate studies to show how global warming is projected to affect the world):

![Figure 5: Climate Impacts at Various Temperature Thresholds](image)

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<thead>
<tr>
<th>ECONOMY</th>
<th>1.5C</th>
<th>2C</th>
<th>4C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global per capita GDP in 2100</td>
<td>$8%$</td>
<td>$13%$</td>
<td>$0.9%$</td>
</tr>
<tr>
<td>Annual flood damage losses from sea level rise</td>
<td>$10.2tn$</td>
<td>$11.7tn$</td>
<td>$12.0tn$</td>
</tr>
<tr>
<td>Global impact on GDP of energy demand for heating and cooling</td>
<td>$0.05%$</td>
<td>$0.19%$</td>
<td>$0.3%$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ICE</th>
<th>1.5C</th>
<th>2C</th>
<th>3C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arctic sea ice</td>
<td>$10%$</td>
<td>$80%$</td>
<td>$100%$</td>
</tr>
<tr>
<td>Probability of ice-free Arctic summer at least once before hitting temperature limit</td>
<td>$3%$</td>
<td>$16%$</td>
<td>$63%$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NATURE</th>
<th>1.5C</th>
<th>2C</th>
<th>4.5C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of species losing &gt;50% of their climatic range</td>
<td>$6%$</td>
<td>$1.8%$</td>
<td>$68%$</td>
</tr>
<tr>
<td>Invertebrates</td>
<td>$4%$</td>
<td>$8%$</td>
<td>$44%$</td>
</tr>
<tr>
<td>Vertebrates</td>
<td>$8%$</td>
<td>$16%$</td>
<td>$67%$</td>
</tr>
<tr>
<td>Plants</td>
<td>$6%$</td>
<td>$18%$</td>
<td>$67%$</td>
</tr>
<tr>
<td>Insects</td>
<td>$4%$</td>
<td>$8%$</td>
<td>$41%$</td>
</tr>
<tr>
<td>Mammals</td>
<td>$2%$</td>
<td>$6%$</td>
<td>$40%$</td>
</tr>
<tr>
<td>Birds</td>
<td>$4%$</td>
<td>$10%$</td>
<td>$58%$</td>
</tr>
<tr>
<td>Butterflies &amp; moths</td>
<td>$1%$</td>
<td>$2%$</td>
<td>$21%$</td>
</tr>
<tr>
<td>Dragonflies &amp; damselflies</td>
<td>$2.4-3.0C$</td>
<td>$3.2-4.0C$</td>
<td>$3.4-4.2C$</td>
</tr>
<tr>
<td>Average warming across drylands</td>
<td>$1.8-2.0C$</td>
<td>$2.4-2.6C$</td>
<td>$3C$</td>
</tr>
<tr>
<td>Average warming across humid lands</td>
<td>$2$</td>
<td>$4$</td>
<td>$10$</td>
</tr>
</tbody>
</table>

![Figure 5: Climate Impacts at Various Temperature Thresholds](image)
Nordhaus’ approach also ignores that economic growth is coupled with exacerbating climate change and other negative ecological and social effects (including the potential to disrupt economic growth) – as the below figures show.

Figure 6: Gross Domestic Product Per Capita, 1749-2013

Figure 7: Socio-Economic and Earth Systems Trends of The Great Acceleration
All of these figures – dubbed “hockey stick graphs” – demonstrate the effects of compound growth that have generally been skyrocketing upward since about 1950 – the approximate date scientists pin as the beginning of the Great Acceleration and the Anthropocene. As early as 1972, the Club of Rome Limits to Growth report by Donella Meadows and her colleagues asserted that such growth trends are unsustainable, as impacts exceeds carrying capacities.

Figure 8: Carrying Capacity and Limits to Growth

The Future We Want, the outcome document of the 2012 Rio+20 Conference on Sustainable Development, set forth an ambition to reconcile a “green economy” with “sustained economic growth.” In a 2019 paper, Jason Hickel and Giogis Kallis examined “Is Green Growth Possible?” Their determination: no.

Green growth theory asserts that continued economic expansion is compatible with our planet’s ecology, as technological change and substitution will allow us to absolutely decouple GDP growth from resource use and carbon emissions. This claim is now assumed in national and international policy, including in the Sustainable Development Goals. But empirical evidence on resource use and carbon emissions does not support green growth theory. Examining relevant studies on historical trends and model-based projections, we find that: (1) there is no empirical evidence that absolute decoupling from resource use can be achieved on a global scale against a background of continued economic growth, and (2) absolute decoupling from carbon emissions is highly unlikely to be achieved at a rate rapid enough to prevent global warming over 1.5°C or 2°C, even under optimistic policy conditions. We conclude that green growth is likely to be a misguided objective, and that policymakers need to look toward alternative strategies.

Systems Scientist Jessie Henshaw, a member of this Blueprint’s Working Group, appeals to natural growth trajectories to propose an alternative model:

ALL enterprises begin following a compound growth (wealth concentrating) phase. That is inherently unsustainable and so also temporary. So, the economic problem of wretched excess can be seen as being that business growth phases are not temporary enough. As I see the new paradigm, it would guide individuals and businesses on WHEN to shift from one natural growth stage to the next. Natural growth to sustainability follows that two-stage development path. The first natural stage concentrates wealth exponentially and the second builds maturity and integration with the environment.
1.2.2. DEBT

How long until you grasp the real connection between our monetary debt and our ecological debt?

James Quilligan, December 2019

In the First Act of Finance for a Regenerative World, Capital Institute Founding President John Fullerton assesses two books that provided post-mortems of the 2008 Global Financial Crisis: Adair Turner’s Between Debt and the Devil: Money, Credit, and Fixing Global Finance, and Michael Hudson’s Killing the Host: How Financial Parasites and Debt Destroy the Global Economy.

Turner believes that “debt is both a blessing and a curse,” according to Fullerton. The blessed aspect of debt was raised in the Second Meeting of this Blueprint’s Working Group, when Gil Friend of Critical Path Capital pointed out that innovation is often necessarily fueled by debt (or equity investment, which brings its own challenges): if innovators had to underwrite their speculative work on future solutions with present assets, the innovation pipeline might very well dry up.

On the cursed side of the ledger, Turner writes that we seem to need credit to grow faster than GDP to keep economies growing at a reasonable rate, but that leads inevitably to crisis, debt overhang, and post crisis recession. We seem condemned to instability in an economy incapable of balanced growth with stable leverage.
The cure for the curse, Turner believes, is oversight with teeth. Hudson offers a more biting analysis, Fullerton believes. Hudson turns von Clausewitz’s famous aphorism – “war is the continuation of politics by other means” – on its head, asserting that “finance has become war by other means.” Hudson explains:

The financial sector has the same objective as military conquest: to gain control of land and basic infrastructure, and collect tribute.39

Hudson invokes Adam Smith’s opposition to this rent-seeking of “unearned” income of debt collection, “often while shifting the tax burden to the working class doing the work we call “earned income.”40 Fullerton points out that in modern economic dialogue, we have completely lost sight of the notion that some income is either ‘unearned’ or unproductive, or both.” Fullerton continues:

I would go further to say that today we define “success” as working long enough in order to become a rent seeker, utilizing one’s financial assets to generate our income for us, rather than be forced into the marketplace to “earn” wages. Indeed, the business model of our retirement system is premised on maximizing such rent seeking on our behalf to be drawn down in our golden years. So, we are all complicit in this flawed system design, with no easy way out. Yet as we’ve said, the system has baked into it the seeds of our long-term demise.

Fullerton points out that neither Turner nor Hudson “call for a fundamental rethinking of the design of our financial system in accordance with the laws of nature, living systems principles, or any other alternative complex system design.”41 Fullerton asserts the need for a “radical” solution, pointing out that the root of this term is “radix” in Latin, which means root. So, curing superficial symptoms does not provide radical solutions, which instead dig down to the root causes of problems.

In the Virtual Dialogue amongst this Blueprint’s Working Group, WG member Joe Brewer encouraged this Blueprint to explore “the role of interest-bearing debt for enslaving people to their debt burdens,” and asked “how can we design for transition processes to allow all of this exponential debt to collapse and go away without destroying real economies during the ‘market correction’ process?”42 The way he frames the problem, Brewer suggests a double-helix relationship between the two issues we’re exploring here: growth and debt. Both have exponential characteristics, which make them anathema to living systems, which mature from exponential growth through a flattening of the curve to a more balanced equilibrium.

One solution – proposed by both WG member Solomon Billeter and David Graeber in his book Debt: The First 5000 Years (which draws on his experience as an Occupy Wall Street organizer) – dates from antiquity: Debt Jubilee.

The word “Jubilee” comes from the Hebrew word for “trumpet” — yobel. In Mosaic Law, it was blown every 50 years to signal the Year of the Lord, in which personal debts were to be canceled.43

So wrote Killing the Host author Hudson in a March 2020 Washington Post opinion piece. Before the Coronavirus pandemic, the idea of a Debt Jubilee was generally scoffed at as “utopian or idealistic”; however, in the Covid context, such a solution is suddenly not only on the table, but featured as a centerpiece.
Hudson contrasts a tale of two Germanys; after World War II, its debt was forgiven, leading to its strong recovery; after World War I, its debt was not forgiven. We all know that this financial burden ultimately led to a moral debt of the greatest degree. Even with this stark example, the idea is not without its detractors, Hudson points out.

Critics warn of a creditor collapse and ruinous costs to government. But if the U.S. government can finance $4.5 trillion in quantitative easing, it can absorb the cost of forgoing student and other debt. And for private lenders, only bad loans need be wiped out. Much of what would be written off are accruals, late charges and penalties on loans gone bad. It actually subsidizes bad lending to leave them in place.

Here again, just as Fullerton had pointed out earlier, Hudson proposes a pragmatic solution, but perhaps not a systemic one. He distinguishes “good” debt from “bad” debt. This is perhaps because he is a foremost proponent of Modern Monetary Theory (MMT), which places government at its center as an instrument of issuing debt to fund positive pursuits (such as the Green New Deal) without suffering financial consequences. If governments can “print money,” they can just as easily erase debt, the thinking goes.

Here is a sampling of MMT thinking from the latest book by Stephanie Kelton, a primary proponent of MMT:

Uncle Sam will never go broke.

Our government will always be able to meet future obligations because it can never run out of money.

As a share of gross domestic product (GDP), the national debt was at its highest—120 percent—in the period immediately following the Second World War. Yet, this was the same period during which the middle class was built, real median family income soared, and the next generation enjoyed a higher standard of living without the added burden of higher tax rates. The reality is that government deficits don’t force financial burdens forward onto future populations. Increasing the deficit doesn’t make future generations poorer, and reducing deficits won’t make them any richer.45

Kelton seems to confuse monetary theory with laws of physics. When an apple dislodges from a tree, we can be fairly certain it will fall to the ground. Whether the US government will “never go broke” advances a level of certainty that simply isn’t founded in the evidence base. Given that there is no human civilization in history that has escaped collapse,46 it seems more certain that the US government (and all governments, for that matter) will go broke. The only uncertainty is when.

And citing the period after the Second World War as evidence of the immunity from debt collapse requires us to ignore a host of countervailing factors. After all, this is the period of the apex of global resource availability – and resource use, as the Great Acceleration research cited above demonstrates. The idea that this resource surplus could float the debt makes sense. The idea that our resource base can float debt in perpetuity is another matter altogether.
A quick glance at this resource base suggests that we expand the aperture of our inquiry wider than a post-WWII snapshot. See, for example, the work of Harald Sverdrup, who took up the World3 modeling work of the Limits to Growth research team, and updated it over 4 generations to arrive at World7 modeling. Applying this approach, he found that stocks of nearly all of the primary resources modern civilization relies on will peak by mid-century, at current extraction and recycling rates. (See Figure 10) What is the significance of the peak year? Sverdrup answers:

Production will decrease from that specific year. This doesn’t mean all minerals are physically used up. An extraction peak year means: we are running out of stocks that are still economically viable. When the price goes up further, it will eventually destroy the profit-margin of what you can sell the product for.

In other words, once a resource passes its peak extraction, it becomes harder and harder to extract more, until it becomes financially unviable to extract more. Which means we run out of resources in practice long before we run out in reality.

### When do world stocks of resources end?

<table>
<thead>
<tr>
<th>Resources</th>
<th>Applications</th>
<th>Extraction Peak Year</th>
<th>Recycling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil</td>
<td>Transport</td>
<td>2049</td>
<td>0%</td>
</tr>
<tr>
<td>Gas</td>
<td>Heating, industry</td>
<td>2049</td>
<td>0%</td>
</tr>
<tr>
<td>Coal</td>
<td>Heating</td>
<td>2049</td>
<td>0%</td>
</tr>
<tr>
<td>Cadmium</td>
<td>Paint dye, batteries</td>
<td>2016</td>
<td>0%</td>
</tr>
<tr>
<td>Gold</td>
<td>Jewellery, investment</td>
<td>2016</td>
<td>0%</td>
</tr>
<tr>
<td>Cobalt</td>
<td>Colourant, batteries, gamma rays</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Gallium</td>
<td>Electronics</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Silver</td>
<td>Jewellery, industry</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Selenium</td>
<td>Vitamins, solar cells</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Natural stone</td>
<td>Construction, decoration</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Lead</td>
<td>Batteries, electronics, construction</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Nickel</td>
<td>MRI scanners, steel, coins</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Tin</td>
<td>Opto-electronics, steel, tin</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Antimony</td>
<td>Lead batteries, fire extinguishers, cosmetics</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Indium</td>
<td>Electronics, solders, semiconductors</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Rhodium</td>
<td>Catalysts, jewellery</td>
<td>2011</td>
<td>0%</td>
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<tr>
<td>Germanium</td>
<td>Glass fibre, infrared equipment, solar cells</td>
<td>2011</td>
<td>0%</td>
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<tr>
<td>Bismuth</td>
<td>Cosmetics, pharmacy (diarrhoea)</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Nickel</td>
<td>Coins, stainless steel, magnets</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Platinum</td>
<td>Electrodes, thermometers, chemotherapy</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Titanium</td>
<td>Aircraft, glasses, bicycles, watches</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Tellurium</td>
<td>Processed in copper, solar panels</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Phosphate</td>
<td>Matches, fertilisers, fireworks, toothpaste</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Palladium</td>
<td>Catalysts, hydrogen cells</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Aluminium</td>
<td>Transport, packaging, construction, equipment</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Iron</td>
<td>Industry, steel, transport, shipbuilding</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Magnesium</td>
<td>Iron and stainless steel, beer cans</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Tantalum</td>
<td>Electronics, smartphones, PCs, cameras</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>Metallurgical industry, defence</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Rhenium</td>
<td>Gas turbines, aircraft engines</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Uranium</td>
<td>Nuclear energy, defence, glass industry</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Zinc</td>
<td>Anti-rust, fencing, roofs, batteries</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Chromium</td>
<td>Stainless steel, coating on metal</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Copper</td>
<td>Coins, electrical wiring, pipes</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Lithium</td>
<td>Batteries, air purification, medicines</td>
<td>2011</td>
<td>0%</td>
</tr>
<tr>
<td>Rare Earth</td>
<td>Electronics, catalysts, magnets</td>
<td>2011</td>
<td>0%</td>
</tr>
</tbody>
</table>

* Are also on the list of “Critical Raw Materials” EU

Source: Harald Sverdrup and Anne O‘Ladadfi

**Figure 10: World Resource Stock Peak Extraction**
At the same time that we are drawing down our natural resource stocks with ecological bankruptcy looming on the visible horizon, we are now overshooting on financial debt. According to the Institute of International Finance (IIF):

Global debt hit a new record high of $255 trillion in 2019. At over 322% of GDP, global debt is now 40 percentage points ($87 trillion) higher than at the onset of the 2008 financial crisis—a sobering realization as governments worldwide gear up to fight the pandemic.50

Remember, global GDP is the net sum of all goods and services produced in the whole world51 – so the entire economy is now leveraged beyond its productivity more than three-fold. And who is most responsible for this living beyond our means? According to IIF again:

Governments have accounted for the lion’s share of the rise in global debt since 2007—from less than $35 trillion to $70 trillion in 2019.52

IIF is not as optimistic as MMT advocates:

Finding the right exit strategy could be even more challenging this time around. Highly accommodative monetary and fiscal policy are essential to mitigate liquidity and solvency risks, but prolonged ultra-loose policies could result in still greater debt imbalances and wealth/income inequality.53

An April 2020 interim report by Sir Partha Dasgupta, the Frank Ramsey Professor Emeritus of Economics at the University of Cambridge, commissioned by the UK’s HM Treasury as an “independent, global review on the economics of biodiversity,” opined that

Just as diversity within a portfolio of financial assets reduces risk and uncertainty, diversity within a portfolio of natural assets—biodiversity—directly and indirectly increases Nature’s resilience to shocks, reducing risks to the services on which we rely. Biodiversity is an essential characteristic of Nature. The economics of biodiversity is therefore the economics of Nature.55
A June 2020 report by De Nederlandsche Bank (DNB) and the Netherlands Environmental Assessment Agency (PBL) entitled *Indebted to nature: Exploring biodiversity risks for the Dutch financial sector* takes this a step further to stress the connection between biodiversity and debt:

> For financial institutions, the risks resulting from biodiversity loss translate into existing financial risks. Physical risks can jeopardise business continuity, reducing business value and damaging the ability to generate profits and repay debts. For financial institutions, this translates into market and credit risks. A transition, particularly if it is abrupt, can increase the probability of default on loans and write-downs of investments in companies with production processes that have a negative impact on biodiversity.56

A January 2020 report from the Grantham Research Institute on Climate Change and the Environment and Planet Tracker entitled *The sovereign transition to sustainability: Understanding the dependence of sovereign debt on nature* extends the debt connection beyond biodiversity to nature more broadly (as seen through the lens of sovereign wealth funds):

> Governments will play a critical role in the transition to a sustainable economy, by setting whole-economy policy frameworks, and by deploying public finance, which is where the issuance of public debt through sovereign bonds becomes crucial. The task ahead is for countries to achieve ‘sovereign health’, which we define as their capacity to issue debt and repay it in a manner consistent with achieving the [Sustainable Development Goals]. This means recognising and valuing the fundamental dependencies of sovereign bonds on natural capital, which are currently ignored and mispriced, thereby storing up instabilities in the future.57

The root question is whether real-world debt can be created without real-world consequences. Some prominent thinkers, such as Economic Democracy Advocates Managing Director James Quilligan, are skeptical:

> Every day I speak with economic reformers who believe that we can get through our civilizational crisis with shiny things like carbon taxes, electric cars and metallic straws. Or perhaps by throwing massive amounts of money at the endlessly wicked problem of climate change, following ideas like Modern Monetary Theory as recently put forward by the backers of the Green New Deal.

> To all of whom I ask: how long until you grasp the real connection between our monetary debt and our ecological debt?

To untangle the modern roots of this planetary dissociation, I keep going back to 17th century Cartesian rationalism, which taught that human bodies (and thus the whole of the biophysical world) are subordinate to human minds. This mind/body split — now embedded in virtually all of our top-down institutions, legal systems and worldviews — is the reason we still do not understand why the world’s social inequality and natural resource declines are actually two sides of the same coin.58

> This is an epochal moment when the world must recreate its economies as ecosystems. If the geometric growth of resources that is driven by the rational mind is not superseded by the regenerative growth that arises through the needs of living organic bodies, our highly complex societies will collapse. We will then lose our capacity for self-sufficiency and an extraordinarily large number of people will suffer from lack of food, water, energy and shelter.59 [emphasis added]

The ultimate question is whether debt can escape the thermodynamic logic of limits to growth, as MMT proponents suggest – or whether financial debt is indeed inextricably bound to ecological debt, requiring humanity to resolve its debt overhang in tandem with its ecological overshoot.
1.2.3. THE CULTURAL EVOLUTION OF ECONOMICS

What we call mainstream economics today is actually a development agenda that I call the global architecture of wealth extraction with an apparatus for setting up deregulation policies and the capture of institutions to enable those who have wealth to influence political outcomes in order to give themselves more wealth... But interestingly, all of this is happening while humanity faces a huge biospheric crisis in which the biosphere of the earth is unravelling with the potential for the extinction of our species as well. We live in dangerous times. And the interesting thing is that the sciences that we need for economics to work have been developed.

Joe Brewer, June 2019

At the 2019 r3.0 Conference in Rotterdam, Joe Brewer of the Capital Institute presented on the "mostly unknown history of economics" that helps explain the "vast disconnect separating a massive body of Earth system science from the field of economics." He made four primary points:

- **Blind spots:** Economics is structurally blinded to significant real-world systemic trends that other sciences can readily see;
- **Linear v non-linear:** Current economics evolved in the 1800s from the foundation of linear (equilibrium) thermodynamic mathematics, and has neglected to integrate developments in non-linear (non-equilibrium) thermodynamics and other sciences, including complexity science, systems science, evolutionary biology, etc...;
- **Neoliberal economics:** This ossification is not accidental, but resulted from a conscious effort to meld neoclassical economics with neoliberal ideology to entrench an extractive form of capitalism;
- **Bioregional Regenerative Economics:** The solution is to shift toward Regenerative Economics, particularly at a bioregional level, through mimetic information flows and networks.

Below, we will provide brief snippets of the argument’s logic in each of these four points to encapsulate this case:

- **Blind spots:**

Brewer commenced by pointing out that the field of economics is essentially blind to the empirical fact that “as the human population goes up and complexity of our societies goes up, there is a corresponding reduction in the complexity of all ecosystems on Earth as measured by biodiversity loss and mass extinction.”

![Humans & The Extinction Crisis](image)


Figure 12: Comparison between human population and extinction development
Brewer likewise points to the Planetary Boundaries research from the Stockholm Resilience Centre, which tells us we are now in a place of overshoot-and-collapse. We have crossed four of the nine boundaries. If you cross even one of them, the possibility of a planetary civilization goes away. You go into a process of destabilizing collapse of our economy, which seems like something economists should care about. And yet most of the mainstream economic discipline is still failing to recognize that this is the reality that we’re living in.62

![Planetary Boundaries](image)

**Figure 13: Planetary Boundaries, Stockholm Resilience Center (2015)**

- **Linear v non-linear**

Brewer explains why this is the case by tracing the history of economics, which, “as a scientific endeavor, got its beginning by studying dead matter”:

In the late eighteen hundreds, the best science available was statistical physics or thermodynamics, the study of the state of a piece of some matter like a liquid or a gas where you can have mathematical tools to tell you things like temperature, pressure, and density, all of which are bulk measures of the statistical properties for trillions and trillions of atoms or molecules. The mathematics they had back then required them to add up the average values for these different molecules assuming that they were at equilibrium because they didn’t have any way of doing the calculations in any other way at the time.
The form of economics that emerged then became known as neoclassical economics. They had to make assumptions about rational behavior, perfect knowledge, and about having an equilibrium of a price signal across a market. All of these things were assumptions for the mathematics to work.

But the big difference was in the 1940s and 1950s they invented digital computers, and, with digital computers, they could run numerical simulations for predator/prey relationships and other interaction dynamics for ecosystems. That enabled the science of ecology to really take off and again thanks to computers, we start to see developments like chaos theory which grew out of Meteorology in 1963 when Edward Lorenz discovered that the equation for fluid flow. If you had an uncertainty of any small amount it would grow exponentially, and the area would overwhelm your predictions and your forecasts. Complexity science, the study of non-linear disequilibrium systems, really began to mature in the early 1980s and codified itself in a robust way between the 1980s and 1990s with the development of the earth system sciences. Our understanding of the multiple dynamics of a living Earth really took shape in the 1990s and onward, as computational abilities and new mathematical tools were rapidly maturing. And somewhere in the middle of the 1970s the first observational weather satellites and the sensor networks for river systems and all these other natural systems were first built. In short, these developments that should help us inform economics are all pretty new.

- **Neoliberal economics**

Brewer rhetorically asked, “doesn’t this bring about an interesting question?” As we do have all of these advances in other sciences, why is it that economics didn’t update itself?” Brewer’s analysis is that this lack of advancement is far from accidental:

Starting in 1947 a group, that most of you may not have heard of, the Mont Pellerin Society, named after a small village in Switzerland where they first gathered, began an agenda that has come to achieve global consequences.

The Mont Pellerin society was formed around the book *The Road to Serfdom* written by Friedrich Hayek. (Note; for a deeper account, the book *Masters of the Universe* by David Stedman Jones, is a good read). These men wanted to recover the unpopular idea that deregulated markets lead to freedom and prosperity.

But several very wealthy business people assembled at the time, saw it as a justification for their own ambitions — namely creating extractive policies that would exploit the weaknesses of other people to gather wealth for themselves and hoard it. Those people supported the Mont Pellerin Society and its agenda and their goal became to conflate and confuse the ideology that they called “neoliberalism” with the science of economics that was called neoclassical.

In short, what we call mainstream economics today is actually a development agenda that I call the global architecture of wealth extraction with an apparatus for setting up deregulation policies and the capture of institutions to enable those who have wealth to influence political outcomes in order to give themselves more wealth. Which is why eight people/eight families now have half of the world’s private wealth. That’s not an accident. The market is doing its job. The economy is functioning as designed. But interestingly, all of this is happening while humanity faces a huge biospheric crisis in which the biosphere of the earth is unravelling with the potential for the extinction of our species as well. We live in dangerous times. And the interesting thing is that the sciences that we need for economics to work have been developed. They exist.
Bioregional Regenerative Economics

How can we bring this knowledge to bear on the question of a more fit economic system? Brewer proposes a lens through which to see a solution:

What I want to suggest is that there is a very old model of human organization that we can return to in order to help us get economics right. And that is the model of organizing societies bioregionally. For those of you who don’t know a bioregion is an area that is defined by an ecological function like a watershed, a mountain range, or a coastal estuary as it overlaps with cultural identity and modes of subsistence for human communities.

I want to make two claims:

1. Humans have degraded landscapes all over the planet to the point that the Earth is now in over-shoot-and-collapse
2. It is necessary to regenerate ecosystem functions at regional scales to restore planetary health and safeguard humanity’s future

And all of this has to do with a very important area of research and cultural evolution which is the study of how ideas and practices spread. Which is what the mimetics is about. One thing that is really essential is their network structure and flow. So, if you look at the network science of social networks and the network science of ecosystems you will see that they have a lot of the same geometric properties and a lot of the same dynamic behaviors. And from this grounding in the study of flows and networks we can understand economics and an ecological way, and a complexity way, and in a social way, that enables us to learn how to manage them.

What Brewer suggests, in essence, is that we can leverage the power of mimetics to help spread understanding of economic systems based on bioregionalism, as well as on ecological, complexity, and social network structures and flows. This represents a radically different foundation for our economic system than the existing assumptions of neoclassical and neoliberal economics.

1.2.4. THE FATAL FLAWS OF FINANCE

Our hypothesis is a simple one: the root cause of our financial system’s disease is the system design itself, not deregulation, bad behavior, too much debt, or for that matter, any diagnosable symptomatic ‘problem.’ Critically, we have failed to question the design of the system, which is why it continues to operate so perniciously. The system design in turn is based on a false ideology, which at its core confuses means with ends. In short, finance ideology is literally killing us — slowly, stealthily, but surely... Just like the ideology of a cancer cell, our finance ideology undermines systemic health until the patient succumbs.

John Fullerton, 2019

In 2019, John Fullerton applied the Principles of Regenerative Economics he’d proposed in his 2015 *Regenerative Capitalism: How Universal Principles and Patterns Will Shape Our New Economy* white paper to the realm of finance in his *Finance for a Regenerative World* paper, which the Capital Institute published serially in four “acts.” In Act II, Fullerton lays out his diagnosis of “The Fatal Flaws of Finance.” Fullerton is particularly well-positioned to advance this analysis, having spent the bulk of his career on Wall Street in the “belly of the beast” of finance, at JPMorgan, eventually rising to the rank of Chief Investment Officer of LabMorgan.
Fullerton enumerates five fatal flaws of finance:

- Finance Ideology: A Confusion of Means and Ends;
- Confusion of Investment with Speculation;
- The Limits of Markets;
- The Agency Problem of Misaligned Incentives; and
- Limits to Investment.

For the purposes of this Blueprint, we will quote Fullerton’s succinct summary each of these fatal flaws in order to be able to identify how the Blueprint’s Recommendations resolve these flaws.

- Finance Ideology: A Confusion of Means and Ends

Fullerton starts by pointing out systemic design flaws, that exacerbate the vagaries of human malevolence:

Finance, left to its own devices, has demonstrated a pattern of extraction from the real economy rather than acting in service of the real economy. We suggested that this outcome has deep ideological roots in which good people playing by the rules unwittingly contribute to bad outcomes for society. The economy is also fraught with excessive greed and outright fraud which are particularly violent and destructive when played out in financial markets. But the accepted practice of systemic extraction of value (rather than the creation of value) runs far deeper. This extraction, ranging from hidden fees in the normal course of retail banking to the most sophisticated so called “financial engineering” conducted by powerful fund managers controlling immense pools of capital is ultimately more harmful to the long run health of our political economy than the well-publicized examples of reckless and unethical behavior within finance.

- Confusion of Investment with Speculation

Fullerton writes:

We have lost track of the distinction between real investment and financial speculation. We have normalized speculation as if it is investment. We have no shared understanding of how to think about excessive speculation and its effect on the real economy, nor how to safely manage it within global finance.

In his masterwork *Overshoot*, William Catton expressed essentially the same sentiment some four decades earlier:

The essential contrast between speculation and genuine investment is this: speculators buy stock not for the purpose of acquiring claims on future dividends from the business in which they acquire shares, but for the purpose of profiting from the expected escalation in their stock’s resale value. When nearly all buyers are speculators; then virtually the only value of their shares is the resale value. Stock prices continue to escalate under such circumstances only as long as virtually everyone expects resale values to continue rising, and are thus willing to buy. The fact that prices may already grossly exaggerate a stock’s intrinsic (dividend-paying) worth simply ceases to concern the speculator during the time when price escalation is confidently expected to continue. Breakdown of that faith, however, turns the process around. Anticipation of inexorable enrichment gives way to fear of ruin as self-induced price escalation turns into self-induced price decline. Panic, in the stock market sense, means the competitive drive to sell before falling prices fall farther—which drives prices down.
Viewed through the lens of systemic analysis, it becomes clear that the act of speculation sows the seeds of its own demise.

- **The Limits of Markets**

  Fullerton notes the ironic deification of markets, particularly “free” ones, when reification is a more logical stance:

  We do not have a proper understanding of markets as tools, where and how they work well, and where their limitations lie. Instead, our discourse on “free markets” has been reduced to an ideological battle across a political divide in which the debate is reduced to the unproductive extremes. Markets are either seen as infallible and omniscient, or markets and the market system are seen as inherently corrupt and thus must be tamed though a heavy regulatory hand. If, on the other hand, we see markets simply as tools with useful but not unlimited applications, this false choice becomes apparent.70

- **The Agency Problem of Misaligned Incentives**

  The conflicts of interest that are inherent in the finance system have created a self-fulfilling prophecy of self-enhancement of sociopaths who have the least incentive or ethical ability to practice self-restraint for the greater good. Fullerton writes:

  I have highlighted the inherent conflicts of interest within finance which pose a proven danger to society. We suggest that financial leaders have not only failed to manage these conflicts, but increasingly seem to be predisposed to exploit them for personal gain. I believe the stakes for individuals and for society are too large to rely on financial firms to manage these conflicts. Instead we must demand structural change to mitigate or eliminate the most dangerous threats. I also underscore the fact that our response to the problems facing Wall Street has been mired in ideology. It fails to factor into our analysis and governance of the financial system the growing scientific evidence that finance appears to attract a significantly higher than average population of psychopathic and anti-social behavior, with repercussions to society as a whole.71

- **Limits to Investment**

  Finally, Fullerton channels the terms of his hero, Dana Meadows, applying her *Limits to Growth* concept to the realm of investment:

  I have laid out the case that in the unprecedented context of the 21st century, there is a strong case to be made that financial assets in general do not yet reflect in their price multiple long-term adverse realities. These include permanent global growth headwinds due to ecological boundaries, unrecognized off-balance sheet liabilities, stranded assets, and government fiscal imbalances and central bank balance sheet over-extensions amplified by contagion from the financial crisis right when economies are increasingly brittle. Collectively, these issues raise the possibility that a material and structural reduction in financial asset and real asset valuation is on the horizon, with severe feedback loops throughout the real economy.

  Finally, I have introduced the concept that there may be in the aggregate “limits to investment” given ecological boundaries that we have already breached, yet our financial system has not even begun to contemplate such limitations, much less how they might be efficiently and fairly managed in the interest of society as a whole.72
2. SUSTAINABLE FINANCE

Chapter 2 builds on Chapter 1 by developing a definition for Sustainable Finance and applying it to current Sustainable Finance initiatives to assess if they are sufficiently aligned with this definition to show promise delivering true sustainability. (Spoiler Alert: the answer is “no.”) Due to its extensive nature, this assessment is merely summarized here, and provided in its entirety in the Annexes. The summary sets the basis for the following Chapters 3, 4, and 5, in which the Blueprint proposes a different framing that is able to reconcile the cognitive dissonance that is currently evident.

2.1. DEFINITION OF SUSTAINABLE FINANCE

After surveying this selection of critiques of finance as practiced, we now turn our attention to the question of sustainable finance. Let us pause for a moment up front to consider the semantics of the term itself: the need to tack a qualifier (“sustainable”) onto the term “finance” suggests that standard practice is, in fact, unsustainable by definition. The previous section certainly bears this out – but the question arises, how do we define “sustainable finance,” and is it in fact fit-to-task? This question rises in importance as the term gains increasing traction. According to Google Trends, the term was in relatively steady low-level use from 2004 (when Google started tracking trends) through the end of 2017 – at which point its use grew fourfold.

But how do we define the term “sustainable finance”?

“Sustainable finance, as defined by experts, is any form of financial service which integrates environmental, social or governance (ESG) criteria into business or investment decisions,” wrote Trisha Taneja of Sustainalytics in early 2019.74 This definition is striking, in that it conflates sustainability with ESG (perhaps because it appeals to “experts” for this definition – more on this in section 0.2.3.1.), disregarding the non-normative nature of ESG.
Swiss Sustainable Finance defines the term thus:

Sustainable finance refers to any form of financial service integrating environmental, social and governance (ESG) criteria into the business or investment decisions for the lasting benefit of both clients and society at large.

A sustainable financial centre is a financial marketplace that, as a whole, contributes to sustainable development and value creation in economic, environmental and social terms. In other words, one that ensures and improves economic efficiency, prosperity, and economic competitiveness both today and in the long-term, while contributing to protecting and restoring ecological systems, and enhancing cultural diversity and social well-being.75

Keith Ambachtsheer takes a slightly different route, appealing more directly to the core definition of sustainability as a means of interpreting “sustainable finance” more literally:

Wikipedia says sustainability is ‘the ability to exist constantly. In the 21st Century, it refers generally to the capacity for the biosphere and humanity to co-exist.’ Thus sustainability means ‘ability to exist constantly’ at the macro (biosphere/humanity) level. It has a parallel meaning at the micro (individual organization) level. These definitions set us on our way to common understandings of macro and micro ‘sustainable finance’. At the macro level, finance is sustainable when all five of its dimensions [mentioned earlier] facilitate the co-existence of our biosphere and humans in the 21st Century and beyond. At the micro level, individual organizations are sustainable when they are adaptive enough to create continuous stakeholder value in the 21st Century and beyond. Paraphrasing Charles Darwin, sustainable organizations may not be the strongest or the smartest, but they are most able to adapt to changing circumstances.76

This definition comes much closer to the definition we would favor with this Blueprint. Specifically, it makes a linkage between micro-level performance by companies, and macro-level conditions of sustainability that require balanced co-existence between humanity and the earth’s biosphere.

But how does one measure and determine sustainability? “Sustainability requires contextualization within thresholds,” said Global Reporting Initiative (GRI) Co-Founder Allen White, in a 2013 interview. “That’s what sustainability is all about.”77 White was a driving force behind GRI’s introduction of the Sustainability Context Principle in 2002, which held that:

sustainability reporting draws significant meaning from the larger context of how performance at the organisational level affects economic, environmental, and social capital formation and depletion at a local, regional, or global level.

[R]eporting organisations should consider their individual performance ... in the context of the limits and demands placed on economic, environmental, or social resources at a macro-level.78
The Principle thus defines sustainability vis-à-vis the micro-macro link between organizational-level performance and systems-level resource stocks – as well as the “limits and demands” placed on those resources. In the 2013 interview, White explained the vital importance of integrating these elements into a robust approach to defining sustainability.

As head of GRI at that point, I felt very strongly that an initiative that purports to be a sustainability initiative could not simply frame its work along the lines of, shall we say, incremental performance assessment. That is, companies that were improving each year in regard to water management, energy management, living wages and occupational health and safety should be recognized in the evolving GRI framework. But incrementalism alone, at the end of the day, was insufficient to be faithful to a sustainability reporting framework. We would have to take a further step and include a principle that would call for assessing — in addition to disclosures on backward-looking benchmarks, peer group comparisons, and improvements against a company’s own goals — performance against thresholds and limits.79

The difference between incremental improvement and sustainable performance is a fundamental distinction that warrants application in our inquiry into sustainable finance.

Sustainability Context’s citing of “limits and demands” also taps into the concept established almost three decades earlier by the United Nations Environment Programme (UNEP) and United Nations Conference on Trade and Development (UNCTAD). In the 1974 Cocoyoc Declaration (named after the Mexican town hosting the UNEP/UNCTAD Conference), British economist Barbara Ward articulated the need to “meet the ‘inner limit’ of satisfying fundamental human needs,” while respecting “the ‘outer limits’ of the planet’s physical integrity” due to “environmental degradation and the rising pressure on resources.”80

This idea of fulfilling the “inner limits” of basic human needs while respecting the “outer limits” of the planet’s ecological integrity resurfaced even more visibly a decade after the Sustainability Context Principle appeared, this time in a 2012 Oxfam Discussion Paper by Kate Raworth tantalizingly entitled A Safe and Just Space for Humanity: Can We Live Within the Doughnut?81 In a bit of mimetic brilliance, Raworth visualized the “inner limits” of “social foundations” and the “outer limits” of “ecological ceilings” as the inner and outer edges of a doughnut, which thus represents a “safe and just space for humanity.”82 The image of the doughnut has become iconic as a graphical representation of sustainability that underlines the key role of thresholds.

Figure 15: Kate Raworth’s Doughnut 2018.
What inspired Raworth was the Stockholm Resilience Centre’s Planetary Boundaries research stream (mentioned earlier in this Blueprint, with a graphic that inspired the above doughnut depiction), first proposed in a Nature article in 2009 entitled “A safe operating space for humanity.” The team of researchers identified nine vital components of earth’s biophysical self-regulation of its living systems, and the thresholds distinguishing healthy systems from collapsing systems.84

Raworth channeled Ward’s wisdom in complementing these “maximum” ecological thresholds with “minimum” social thresholds (thereby tacking on the term “just” to the term “safe” to describe humanity’s “operating space”). The 2015 update of the Planetary Boundaries research stream finds that aggregate human activity is overshooting four of the nine thresholds.85 And humanity is shortfalling on all of the twelve social thresholds that Raworth identifies in her Doughnut Economics research stream (drawn primarily from UN sources).

Two important UN reports from the past half-decade reinforce these thresholds-based approaches. In 2015, UNEP released a report entitled Raising the Bar: Advancing Environmental Disclosure in Sustainability Reporting, which made the following set of recommendations:

- All companies should apply a context-based approach to sustainability reporting, allocating their fair share impacts on common capital resources within the thresholds of their carrying capacities.
- Multilateral organizations should collaborate to create a global governance body of scientists, academics, business practitioners, NGOs and other stakeholders to provide guidance on methodologies for determining ecological (and social) thresholds, as well as guidance on approaches to allocations, all of which are broadly applicable to the business level.
- Raters should develop frameworks and mechanisms to apply Context-based assessments of corporate sustainability performance based on publicly available data routinely disclosed in sustainability reports.
- Reporting standards / guidance bodies such as GRI, IIRC, SASB, CDP, etc. should integrate Sustainability Context more explicitly into their frameworks, for example by applying the concept of carrying capacities to multiple capitals-based frameworks.86

It is only a short leap from these Recommendations to corporations, multilaterals, raters, and standard setters, to extrapolate that all financiers should apply a Context-Based approach to Sustainability by integrating thresholds & allocations into their financing decisions and toolkits.

In 2019, the United Nations Research Institute for Social Development (UNRISD) released a report that introduced a three-tiered typology for sustainable development performance indicators. The tiers are predicated in large part on the Sustainability Quotient (S=A/N), which holds that “Sustainability” equals “Actual Impacts” (on the carrying capacities of capitals) over “Normative Impacts” (on the carrying capacities of capitals).88

**Figure 16: The Sustainability Quotient**
The UNRISD report defines the three tiers thus:

- **Tier One: Incrementalist Numeration**
  - Numeration indicators focus on actual impacts, which include absolute indicators as well as “intensity” indicators that describe performance relative to a non-normative counterpart (such as unit of production), and are therefore incrementalist by definition.

- **Tier Two: Contextualized Denomination**
  - Denomination indicators contextualize actual impacts against normative impacts. Also known as “Context-Based” indicators, denominator indicators take into account sustainability thresholds in ecological, social, and economic systems, as well as allocations of those thresholds to organizations and other sub-system entities such as sectors, portfolios, or bioregional habitats.

- **Tier Three: Activating Transformation**
  - Transformation indicators add transcontextual elements of implementation practices and policies (as well as more ephemeral emergence) to normative indicators in order to instantiate sufficient change within complex adaptive systems.90

Translating the relevance of Tier Three to the context of finance, the idea is that when an existing system is demonstrably unsustainable (as established in Section 1.3), it requires transformation of the existing system into a new system if we wish to achieve a sustainable system – in this instance, a sustainable finance system. According, one can think of Tiers One and Two as content-oriented tiers, while Tier Three is a process-oriented tier: Tier One measures what the impacts are, Tier Two measures whether these impacts are sustainable (or not), and Tier Three measures the process of shifting from an unsustainable to a sustainable system.

To provide a sense of the prevalence of activity in each tier, the UNRISD report cites a 2017 study of more than 40,000 corporate responsibility reports issued from 2000 to 2013 asking, “Is Earth recognized as a finite system in corporate responsibility reporting?” The study found that only 5% of reports made any mention of “ecological limits” (and related keywords), and a scant 0.258% of reports integrated those limits into product design or corporate strategy.91 So in essence, Tier One incrementalist numeration prevails, with Tier Two contextual (thresholds-based) denomination exceedingly rare.

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**Is Earth recognized as a finite system in corporate responsibility reporting?**

In a 2017 study published in the peer-reviewed Journal of Cleaner Production, Danish researchers systematically reviewed references to “ecological limits” (and similar keywords) in 40,000 corporate responsibility reports issued between 2000 and 2013.

- 40,000 Corporate Responsibility Reports (2000–2013)
- ≈ 5% of companies referred to ecological limits in any year
- Of the ≈ 12,000 companies in the study universe, only 31 (0.258%) disclosed plans to align performance or products to such limits.

Note on sizing: percentages represented accurately to scale.

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Figure 17: Bjørn et al 2017; Baue 2019
Of course, this typology applies not only to indicators, but also to what’s indicated – sustainable development, which requires sustainable finance as well (per Nobelist Shiller’s notion that finance fuels “valuable activities”). So sustainable finance will need to comply with these three tiers. Yet, as we will see later, “sustainable finance” as currently practiced remains largely confined to the first tier of “incrementalist numeration,” with precious little application of the very thresholds that define sustainability (via “contextualized denomination”).

In other words, so-called sustainable finance as currently defined lacks a specific link between portfolio-level impacts on ecological, social, and economic resources, and the overall stocks of those resources at the macro-systems level. Accordingly, “sustainable” finance as currently practices has no mechanism for determining actual sustainability.

To address this, sustainable finance will need to mature into a more robust definition of sustainability grounded in thresholds. This is precisely why the first Activation Factor in this Blueprint calls for Threshold Investing (more on that later).

2.2. SUMMARY ASSESSMENT OF SUSTAINABLE FINANCE INITIATIVES

Building on the definitions of chapter 2.1. and applying them to earlier and current so-called Sustainable Finance initiatives we aim to assess their effectiveness to deliver on the core meaning of Sustainable Finance. We use the considerable research that we conducted in this project and described in depth in chapter 8.1. to summarize our findings. We are guided by the following points from chapter 2.1.:

- A general recognition of the linkage between micro-level performance by companies, and macro-level conditions of sustainability that require balanced co-existence between humanity and the earth’s biosphere.
- The difference between incremental improvement and sustainable performance.
- Application of a context-based approach to sustainability (reporting), allocating their fair share impacts on common capital resources within the thresholds of their carrying capacities.
- Voicing support of the creation a global governance body of scientists, academics, business practitioners, NGOs and other stakeholders to provide guidance on methodologies for determining ecological (and social) thresholds, as well as guidance on approaches to allocations, all of which are broadly applicable to the business level.
- Compliance with minimally tier 2 of the above mentioned UNRISD typology: Denomination indicators that contextualize actual impacts against normative impacts. Also known as “Context-Based” indicators, denominator indicators take into account sustainability thresholds in ecological, social, and economic systems, as well as allocations of those thresholds to organizations and other sub-system entities such as sectors, portfolios, or bioregional habitats.
- In addition – in the interest of investment performance measurement – exploring tier 3 indicators of the above mentioned UNRISD typology: Transformation indicators that add transcontextual elements of implementation practices and policies (as well as more ephemeral emergence) to normative indicators in order to instantiate sufficient change within complex adaptive systems.
In annex chapter 8.1.1. we look at the early attempts to Sustainable Finance, mainly in the phase from 2002 to 2008 (with roots way earlier), covering a phase that we called ‘from SRI to ESG’, and mentioning UNEP FI, UN PRI, SSEI, GRI and early ESG benchmarking approaches. It is important to interpret these early movements for the impact they have really had: they have helped to strengthen ‘ESG Performance Measurement’. In r3.0’s understanding this is now more than 20 years of experience in ‘numerator management’ (in the light of the Sustainability Quotient, and summarized above as tier 1 indicators in the UNRISD typology), and while sustainability reports from financial services companies and sustainability ratings and rankings mention ‘sustainability’ in their title they deliver no true sustainability message due to the lack of science-based and ethical norms that are needed as denominator.

Turning to the more current Sustainable Finance initiatives, we refrain from describing their initiatives, actions and outcomes here, they can be assessed in chapter 8.1.2. in all depth, and just apply the above-mentioned criteria with regard to their effectiveness to Sustainable Finance as we defined it in chapter 2.1.

- UNEP Inquiry

  - Quick info: The Inquiry was a leading international platform for advancing national and international efforts to shift the trillions required for delivering an inclusive, green economy through the transformation of the global financial system. Since launching in 2014, the Inquiry has worked with more than twenty countries on national processes, published around 90 reports and working papers and serves as the Secretariat for the G20’s Green Finance Study Group. The Inquiry has considered aspects of financial and monetary policies and financial regulations, and standards, including disclosure requirements, credit ratings, listing requirements and indices. We have also focused on the roles of the financial system’s rule-makers (central banks, financial regulators, finance ministries and standards institutions) alongside market-based standard-setters (stock exchanges and key international organizations and platforms).

  - Our assessment:

    - We lack a proper definition, cut-off criteria and principles of sustainable finance. The Inquiry therefore looks at very action-driven aspects in a ‘second-step’ approach without offering a clear frame as the ‘first step’. What is sustainable finance really and what is it working towards? How is it dependent from a changed economic system? As a result, the Inquiry is a useful contribution to the meso and macro design needs of a financial system that can support more sustainability, but in a given and unsustainable economic system.

    - There is much more focus on the growth of policies and number of ‘green’ products than assessing its real impact. It is assumed that they deliver ‘green’ within climate and the environment. The rest of triple bottom line remains uncovered.

    - There is not one single notion of context-based and multicapital-based approaches as a precondition to sustainable finance. It is an unknown to us how meso and macro-level approaches can support the cause without them.

    - The Inquiry also has a distinct preference with regard national activism. On the one hand it is showing the willingness of state actors to build regulatory infrastructure and networking on comparable issues, driving up numbers alone with a clear link to sustainable finance as described is just not sustainable finance per sé.

    - After the 2019 progress report (about 2018 developments) there is no mention of future progress reports. How will we know if future success and what we will recommend will collectively unfold not just more, but better policies globally? The website of the Inquiry mentions its mandate only covered the years 2014-2018. A second phase, involving the micro-level, and of which this Blueprint could be a basis of, seems sorely needed.
- Task Force for Climate-Related Financial Disclosure (TCFD)

  o Quick info: The TCFD was instigated and installed in late 2015, based on a groundbreaking speech by Bank of England Governor Mark Carney, ‘Breaking the Tragedy of the Horizon - Climate Change and Financial Stability’. In its mission statement the Financial Stability Board Task Force on Climate-related Financial Disclosures (TCFD) says it ‘will develop voluntary, consistent climate-related financial risk disclosures for use by companies in providing information to investors, lenders, insurers, and other stakeholders. The Task Force will consider the physical, liability and transition risks associated with climate change and what constitutes effective financial disclosures across industries. The work and recommendations of the Task Force will help companies understand what financial markets want from disclosure in order to measure and respond to climate change risks, and encourage firms to align their disclosures with investors’ needs.’ In June 2017, the TCFD published its final TCFD Recommendations report and supporting materials, and in July 2017 presented these at the G20 Summit in Hamburg, Germany. Since then the TCFD and CDSB launch TCFD Knowledge Hub in 2018 and issued two Status Reports.

  o Our assessment: Is TCFD enough to get us where we need in Sustainable Finance as envisaged in this Blueprint? The answer is a straight ‘no’. Here’s why:

    □ It is first and foremost an outside-in risk reduction mechanism, as is the prominent risk management understanding of COSO. There is no focus towards ‘inside-out risk’, which for many years has been identified as a missing part. Even the GRI Guidelines since the earlier G3, G4, G4.1, and now in its standards, emphasize the need for outside-in and inside-out risk perception.

    □ There is no reference to thresholds beyond referring to 2 degrees and 1.5 degrees Paris target setting as the broader frame. The translation of macro-based carbon budgets into sector and company allocations isn’t mentioned.

    □ There is no ‘activated’ mechanism to necessary transformation process implementation that risk management should actively be supporting. TCFD, in our view, is ‘stuck’ in stopping at the level of scenario planning and therefore negates ‘implementation risk’ or ‘transformation risk’ in its deliberations.

    □ However, on the positive side, the broad uptake of TCFD in so many other initiatives, standards, regulatory efforts etc. is a great and surely needed effort in a change-resistant world of fenced standards, competition amongst initiatives, with due thanks to Mark Carney, Michael Bloomberg, and some other leaders that paved the way to a forum like the TCFD. We think TCFD could have way more impact when I just embraced these three mentioned critiques offered here.
• EU taxonomy for climate change, environmentally and socially sustainable activities

  o Quick info: This Blueprint looked specifically at two main projects of the EU Action Plan for Sustainable Growth. The creation of the so-called 'Taxonomy' for Sustainable Finance was the first one. The process evolved in parallel to the development of this Blueprint and annex chapter 8.1.2.3.1. looks into this in extensive depth as it aims at capturing the dynamics of this huge EU undertaking over two years. Resulting from this initiative were a June 2019 status report and taxonomy proposal annex report and well as a March 2020 final report with annex report, altogether 700 pages of detailed content.

  □ We like to first point out one quote from the June 2019 report that is a posterchild of the problem of sustainability context: the use of term threshold in a non-scientific way, something that corrupts the complete intention of the 'Sustainable Finance' idea: "To ensure the broadest usability of the Taxonomy possible, the TEG had to arbitrate between granularity and flexibility as well as between complexity and clarity. A very granular Taxonomy, which uses precise metrics and thresholds, is expected to provide clarity and to minimize the risk of greenwashing. Nevertheless, there is a risk that requirements that are too granular and stringent lower the willingness of stakeholders to take up the Taxonomy, due mainly to the costs to access the necessary data and adapting their internal processes. On the other hand, more flexibility in the definition of screening criteria may facilitate the use of the Taxonomy but increase significantly the risk of divergent interpretations and greenwashing. Another challenge regarding the definition of the screening criteria is setting the adequate level of thresholds. Setting too low or too high thresholds, which do not reflect best market practices, would undermine the Taxonomy's ultimate goal of redirecting financial flows towards sustainable investments. Consequently, the selection of the Taxonomy's thresholds has been carefully considered, based on existing standards and consultation processes with experts in the relevant sectors."

  □ This explanation makes it clear that the EU Technical Expert Group is approaching thresholds not as biophysical realities that must be abided in order to achieve sustainability in the real world, but rather as political variables open to negotiation amongst those with diverse positions of power. Therefore, it's vital to understand that the term "thresholds" used throughout the 400+ page document is not sustainability thresholds, but rather thresholds as defined to "reflect best market practices" with the "ultimate goal of redirecting financial flows towards sustainable investments." Of course, this raises the question of just how those investments can possibly be "sustainable" if the thresholds used to measure them are divorced from biophysical reality?

  □ Overall, the report concludes: "The taxonomy is expected to bring benefits to financial markets participants, in particular banks and insurers, by facilitating the identification of sustainable assets and consequently the integration of sustainability factors in their investment decisions. The taxonomy is also expected to encourage the incorporation of sustainability concerns by corporations and investees into their strategy, providing an opportunity to diversify its investor base and more certainty on the transition path. The main costs derived from the implementation of the taxonomy relate to the collection and management of data needed to assess the compliance with the defined screening criteria. [...] Retail consumers will benefit from the increased transparency, easier access to green products (with reduced risk of greenwashing) and better comparability. Finally, regulators and supervisors could leverage the taxonomy to implement new green investment frameworks at a lower cost. The actual impacts may vary significantly depending on several factors, the adoption of related regulatory actions (e.g. mandatory integration of ESG considerations into the investment and advisory process) and the level of appropriation of the taxonomy by the private sector, at the same time depending on its usability and dynamism."

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Our assessment: What’s the contribution that the final report and the annex deliver towards Sustainable Finance, also considering this assessment in the light of the earlier comments that we made summing up the first report from June 2019:

- The taxonomy, as now explained in the TEG’s final report, doesn’t define sustainability, just environmental mitigation and adaptation activities, so it also can’t per definition support ‘Sustainable’ Finance in the way that it’s necessary and explained in chapter 2.1. The reports admit that the social (and economic) field isn’t covered by the Taxonomy yet, with plans to enlarge somewhere in the future.

- There are no numbers about amounts or extent of activities necessary in order to meet minimum absolute requirements (per sector) in order to reach minimally zero negative impacts. In short: when is there success as a whole in relation to thresholds & allocations for industries, subindustries and certain regions of Europe. It is assumed that every activity falling under the Taxonomy does good (mainly reducing harm), but when is good also good enough to call it a success? We expect that the Green New Deal goals will hopefully further clarify these questions (relating to the fact that this context did not exist in the first report from June 2019).

- The taxonomy looks at economic activities – clustered by sectors – that can support climate change adaptation and mitigation; it defines principles and metrics & ‘thresholds’ per sector activity, but again, not as ‘necessary’ to adhere neither to ‘Sustainable’ Finance, nor to the biophysical realities. It still prefers political variables open to negotiation amongst those with diverse positions of power, while some admittedly rely on existing legislation. In our view ultimate and so far-reaching political determinations need to square themselves with ‘non-negotiable’ thermodynamic realities.

- The taxonomy doesn’t mention ‘unsustainable’ activities (e.g. a blacklist) that could continue to receive funding and do harm to the environment. In consequence there is also no penalizing of such activities. In practical terms, the taxonomy wouldn’t build a frame for the EU to stop fossil fuel subsidies in favor of the EU taxonomy activities. Luckily, the final report now talks about ‘brown’ activities to be assessed in the future, and it will rely on the Green New Deal to shut down funding for fossil-based technology. Realistically, and looking at national plans, such subsidies are still planned in until the mid 2030ies (taking Germany as an example where the ‘coal deal’ runs until 2038).

- The taxonomy is not complete (exhaustive) in its first version, while in climate terms it mentions coverage of 93.5 % of emissions in the EU. There is no mechanism defined yet how to assess and complete activities exhaustively, as there’s no vision what the ultimate goal of the taxonomy vis-à-vis a generic change of the economic system design. Again, we would expect the European Green New Deal would accelerate this need for clarification.

- As the taxonomy is based on the EU Action Plan on Financing Sustainable Growth, there is no focus on aspects like de-growth or subsistence activities as alternatives to growth; the taxonomy approach is still full baked into the existing growth-based economic system paradigm. It doesn’t reveal a vision about an alternative economy system design that could in fact be ‘sustainable.

- We think the final compromise made progress, but more towards more granularity of what existed, than what the EU Green New Deal would expect to deliver. This has been a political process above all and the handwriting of political opportunism and what’s practically possible in the time the TEG and politicians was given, is clearly visible.
• **Revision of the EU Guidelines on non-financial information as regards climate-related information**

  o **Quick info:** The TEG also published their recommendations for the second major mandate they received from the EU on financial reporting disclosures to the Commission in January 2019\(^97\). In this comprehensive report of the TEG three major developments are visible:
    □ Embedding TCFD in the NFRD\(^98\)
    □ Mapping of TCFD Recommended Disclosures and NFRD Requirements\(^99\)
    □ Defining different types of disclosure based on the level of exposure of reporting companies with respect to climate-related risks and opportunities\(^100\)

  o **Our assessment:** Summing up the recommendations there and contrasting it with the needs for Sustainable Finance, various observations can be made:
    □ Both the TEG report and the EU communication step forward in what the EU Taxonomy and the TCFD recommendations set out to achieve, but stay limited in climate-related activities;
    □ Both shy away to assess a more complete sustainability perspective and stay limited in the environmental and climate-related area, while every now and then remarks about the triple-bottom-line are made, but not further followed up;
    □ With regard to disclosures that could make a real assessment of the sustainability of an activity, the recommended data only allow ‘numerator-based’ results, which falls under the remit of ESG Integration;
    □ With regard to context-based information, the documents don’t offer thresholds beyond a general notion to adhere with the Paris Climate Accord, or more general zero GHG emissions by 2050.
    □ It is commendable that the communication clarifies the need for inside-out and outside-in risk assessments in order to define climate mitigation and adaptation risks and also opportunities;
    □ Regeneration and de-growth strategies as innovation beyond zero negative impact seem to not exist in the imagination of the TEG or the EU communication;
    □ Sustainable Finance or any of the **Activation Factors** and **Transformation Factors** as recommended as specific action areas of this Blueprint (see chapter 4 and 5) are nowhere discussed.

In Spring of 2020 the European Commission started a two-step feedback process on the revision of the Non-Financial Reporting Directive (NFRD). In a first step they offered a general consultation on three policy options, best described as 1) leave the NFRD as it is, 2) let the Directive be more based on (a) standard(s), and 3) strengthen the directive where necessary. This was followed by a survey process that ran until June 2020. r3.0’s feedback to the step 1 consultation and in favor of option 3 has been submitted and is laid out in more depth and including graphics in a Medium article\(^101\). The second step of the consultation was questionnaire-based, and r3.0 submitted its response by June 10, 2020. Based on the overall feedback it remains to be seen if the EC is ready to take steps that align the NFRD with ‘sustainability’ reporting aspects that would support ‘sustainable’ finance as discussed in this Blueprint.

• **UN Principles for Responsible Banking**

  o **Quick info:** In summer of 2019 the Principles of Responsible Banking were launched by 130 banks from 49 countries, representing more than USD47 trillion in assets, on 22 and 23 September 2019 in New York City, during the annual United Nations General Assembly. More than 45 CEOs together with the UN Secretary-General attended the launch ceremony\(^102\). For their development 30 leading banks from around the globe, jointly representing more than USD 18 trillion in assets, have come together to establish the Principles for Responsible Banking under UNEP FI. These 30 banks have been advised by a group of 12 civil society institutions, including Oxfam International, 2 Degrees Investing Initiative and WWF, in the development of the Principles for Responsible Banking\(^103\).
Our assessment: Looking at the value of the UN PRB, we are first citing Adam Garfunkel, MD of Junxion, a r3.0 Advocation Partner and consultancy that was involved in the development of the Principles for Responsible Banking. He notes: 'So, they [the Principles] are not going to be easy to implement—but we all know they are necessary. The Principles represent an outstanding opportunity for the banking industry to do the right thing. To demonstrate that they are serious about backing up their social purpose statements with real impact that "achieves shared prosperity for both current and future generations", as the Principles’ mission statement says. And given the crucial role that finance plays in society’s collective efforts to create a better future, there is a lot riding on how banks step up here. It’s more than securing their own legitimacy and creating the sustainable banking system of the future, it’s about financing the change we need to see in the world. Even more than that, we need these industry initiatives—these ‘meso-level’ activities in r3.0 parlance – to succeed and society has to see that they do. The real opportunity of the Principles is to convince a sceptical world that businesses can and will collaborate for the common good.'

This comment is a strong plea for an industry to step up to the challenge, which we strongly agree to. However, a further assessment of the UN PRB, again looking at necessary ingredients of Sustainable Finance as laid out in chapter 2.1., reveal some shortcomings:

- The UN PRB demands an impact assessment; it isn’t clear how that is linked to sustainability context, so at this moment and as far as we can see impacts are not contextualized.
- Furthermore, the UN PRB relates to and therefore uses a traditional materiality process approach.
- The UN PRB also doesn’t make use of the possibility of multiple capitals and their assessment.

German Sustainability Finance Cluster

Quick info: Many countries have become active in the field of Sustainable Finance themselves, having set up initiatives by the finance sector or seeing government-led advisory groups or councils that aim at defining a national strategy towards Sustainable Finance. We use the example of Germany to showcase that behind good intentions there is a lack of substance and willingness to do ‘necessary’ homework, while at the same time going granular on what is just ESG numerator management and oversight.

Our assessment: While the way the GSFC and the Sustainable Finance Committee of the German Federal Government) are organized, governed and their activities are clearly structured and intentions well laid-out, it clearly needs to be seen as one of many actors that undermine the term ‘Sustainable Finance’ in areas that remain stuck in the reduced understanding of ESG Integration as a substitute for sustainability and thereby – like the EU approaches, the TCFD and the NFDR – remain insufficient in ‘numerator management’ of ESG topics. Attempts by r3.0 in trying to ‘open up’ to what’s necessary and to enlarge the scope to true ‘sustainable’ finance remained unheard, which showcases a lack of the GSFC to actually question our overall economic system set-up. This is – as shown in earlier chapters - a recipe for failure in the long run. It is to be hoped that this Blueprint will allow for a renewed willingness to discuss, especially with the recommendations of chapter 3, 4 and 5 in mind. We refrain to repeat other shortcomings, as they overlap with what was already said for the EU Taxonomy, TCFD and the NFDR.
- **Central Bank/Supervisors Network for Greening the Financial System**

  - **Quick info:** The Origin of the Network for Greening the Financial System\(^{105}\) goes back to the Paris "One Planet Summit" in December 2017, where eight central banks and supervisors established the Network of Central Banks and Supervisors for Greening the Financial System (NGFS). Since then, the membership of the Network has grown dramatically, across the five continents, to 49 members and 9 observing organisations\(^{106}\). The Network's purpose is to help strengthening the global response required to meet the goals of the Paris agreement and to enhance the role of the financial system to manage risks and to mobilize capital for green and low-carbon investments in the broader context of environmentally sustainable development. To this end, the Network defines and promotes best practices to be implemented within and outside of the Membership of the NGFS and conducts or commissions analytical work on green finance.

  - In its initial call to action the NGFS called for
    1. Integrating climate-related risks into financial stability monitoring and micro-supervision
    2. Integrating sustainability factors into own-portfolio management
    3. Bridging the data gaps
    4. Building awareness and intellectual capacity and encouraging technical assistance and knowledge sharing
    5. Achieving robust and internationally consistent climate and environment-related disclosure
    6. Supporting the development of a taxonomy of economic activities\(^{107}\)

  - While today's macroeconomic models may not be able to accurately predict the economic and financial impact of climate change, climate science leaves little doubt: action to mitigate and adapt to climate change is needed now. The NGFS recognizes that there is a strong risk that climate-related financial risks are not fully reflected in asset valuations. There is a need for collective leadership and globally coordinated action and, therefore, the role of international organisations and platforms is critical\(^{108}\).

  - **Our assessment:** While the challenge couldn't be set clearer in its magnitude and need for necessary action (using 'transition' at various stages within the report), the 6 recommendations unfortunately (or fatally) fall short of supplying the necessary actions. Falling back to ESG, scenarios, a taxonomy, etc. reveals the limited willingness to full grasp and assess the needed economic system change in which true sustainable finance needs to serve the purpose.

**Summary Interpretation of current activities on Sustainable Finance**

As we have looked into a set of current activities on Sustainable Finance, not based on an exhaustive, but a relevance perspective, we conclude that there is a general and rather complete lack of understanding of what 'Sustainable Finance' actually entails. The root cause of this shortcoming is the lack of understanding and implementation of Sustainability Context. r3.0 is instigating a Global Thresholds & Allocations Council\(^{109}\) to cure this 'global pandemic' of an insufficient understanding of sustainability since it was first recommended by the Brundtland Report in 1987, and watered down to some sort of regime of technicalities covered by policies, management system standards, reporting requirements, assurance provisions and legal requirements. The assessed current activities so far do no cure to that shortcoming of understanding, they are lost in detail, while basic homework has not been done. The 'mindset shift' to return to what Sustainability Context actually entails is in our view essential to all players, including governments, corporations, and especially financial market players. There is a huge opportunity for the financial markets to cut to the chase and be the main driver for that mindset shift. This is what we will describe in the following chapters through discussing **Enabling Factors** (Chapter 3), **Activation Factors** (Chapter 4), and **Transformation Factors** (Chapter 5), before we make practical **Recommendations** in Chapter 6.
3. ENABLING FACTORS

Finance is embedded into every human being’s transactions on a daily basis. Money as a sign of value is predominant. Our economic system’s exchanges of goods and services only function if there is a financial transaction combined to it. And while that is still needed the global amount of circulating money has long multiplied over the amount needed to keep the exchange of goods and services rolling. As discussed in chapter 1.2. the dependency from growth and debt supported by the finance sector (as well as other dependent constituencies, e.g. politics that ultimately frame economies through laws) is a constant challenge for designing a ‘sustainable finance’ sector.

In this chapter we focus on some of the emerging Enabling Factors in which sustainable finance could start to develop and prosper, and to help the Activating Factors (to be discussed in chapter 4) come into fruition, simply when those enablers function and demand action. We focused on these because we think they can guide us away from the discussed shortcomings and frame a positive and enabling environment in the triangulation of humans, finance needs and economic designs. These enablers are not meant to be exhaustive, but in r3.0’s view best catered to get us to where we want to in the design of ‘sustainable’ finance.
Here are the sets of Enabling Factors, which will be explained in depth in later sections of this chapter:

- **Eight Principles of a Regenerative Economy** (Capital Institute)
  - Based on universal patterns of living systems
- **Nine Disclosure Principles of a Regenerative & Distributive Economy** (r3.0)
  - Based on best practices in disclosure and transparency
- **Eight Principles for Governing a Commons** (Elinor Ostrom / David Sloan Wilson)
  - Based on Nobel Prize research
- **Nine Elements of Civic Fiduciary / Equity Culture** (Marcy Murninghan)
  - Based on action research on the intersection of fiduciary duty and beneficiary interests

As Figure 18 shows we see the first two as ‘framing enablers’ and the second pair as ‘process enablers’ of the discussion of a design of sustainable finance, and a necessary pre-step to let the forthcoming Activation Factors come into fruition, simply because the mindset is there of wanting to change towards what’s needed.

### 3.1. FRAMING ENABLERS

Where to start the discussion about Sustainable Finance if the current economic system and its incentive structures are deeply unsustainable? At r3.0 we recognize the need for a reform of our economic system thinking, needing to serve ecological and social systems, not continuing to destroy it. It is easy to get into a chicken-and-egg discussion of what should be reformed first, which we aim to avoid. We continue to think from the ideal of a regenerative and distributive economy as laid out in the r3.0 Reporting Blueprint (see chapter 2.1.2. that picks up on r3.0’s own 9 Principles) and further contextualized in a Medium article in 2020. There, we generally presented a triangulation of change areas that will simultaneously help to create necessary change, namely thinking in terms of

- **‘Rightsholders’**: replacing the stakeholder concept with the more robust idea of rightsholders;
- **Thresholds & Allocations**: asserting the need to apply normative sustainability thresholds & organizational allocations (beyond incrementalist ESG); and
- **True Measures**: implementing "true" measures on costing, benefiting, pricing, taxing, and compensation.

These are of utmost importance to be well understood in the financial sector as well. In order to frame this necessary discussion, we at r3.0 relied on two principle-based frames and recommend them as the creation of a ‘safe discussion space’ for designing sustainable finance.
3.1.1. EIGHT PRINCIPLES OF A REGENERATIVE ECONOMY (JOHN FULLERTON / CAPITAL INSTITUTE)

r3.0’s connection with John Fullerton, Founding President of the Capital Institute, goes back a decade. In 2015 John spoke at the 3rd r3.0 International Conference and presented to us what was then leading to his late 2015 paper *Regenerative Capitalism: How Universal Principles and Patterns Will Shape Our New Economy*, in which he proposed “8 Principles of a Regenerative Economy.” We would like to point you to the slide in the picture above in which he connected the observation of an ‘anti-economy’ with the resulting ‘financial system without a sound economic basis and without economic virtues’, leading to the need for the development of the 8 principles.

![Figure 19: John Fullerton, Regenerative Capitalism](image)
He explains the 8 Principles thus:

1. **In Right Relationship**: Humanity is an integral part of an interconnected web of life in which there is no real separation between “us” and “it.” The scale of the human economy matters in relation to the biosphere in which it is embedded. What is more, we are all connected to one another and to all locales of our global civilization. Damage to any part of that web ripples back to harm every other part as well.

2. **Views Wealth Holistically**: True wealth is not merely money in the bank. It must be defined and managed in terms of the well-being of the whole, achieved through the harmonization of multiple kinds of wealth or capital, including social, cultural, living, and experiential. It must also be defined by a broadly shared prosperity across all of these varied forms of capital. The whole is only as strong as the weakest link.

3. **Innovative, Adaptive, Responsive**: In a world in which change is both ever-present and accelerating, the qualities of innovation and adaptability are critical to health. It is this idea that Charles Darwin intended to convey in this often-misconstrued statement attributed to him: “In the struggle for survival, the fittest win out at the expense of their rivals.” What Darwin actually meant is that: the most “fit” is the one that fits best i.e., the one that is most adaptable to a changing environment.

4. **Empowered Participation**: In an interdependent system, fitness comes from contributing in some way to the health of the whole. The quality of empowered participation means that all parts must be “in relationship” with the larger whole in ways that not only empower them to negotiate for their own needs but also enable them to add their unique contribution towards the health and well-being of the larger wholes in which they are embedded.

5. **Honors Community and Place**: Each human community consists of a mosaic of peoples, traditions, beliefs, and institutions uniquely shaped by long-term pressures of geography, human history, culture, local environment, and changing human needs. Honoring this fact, a Regenerative Economy nurtures healthy and resilient communities and regions, each one uniquely informed by the essence of its individual history and place.

6. **Edge Effect Abundance**: Creativity and abundance flourish synergistically at the “edges” of systems, where the bonds holding the dominant pattern in place are weakest. For example, there is an abundance of interdependent life in salt marshes where a river meets the ocean. At those edges the opportunities for innovation and cross-fertilization are the greatest. Working collaboratively across edges – with ongoing learning and development sourced from the diversity that exists there – is transformative for both the communities where the exchanges are happening, and for the individuals involved.

7. **Robust Circulatory Flow**: Just as human health depends on the robust circulation of oxygen, nutrients, etc., so too does economic health depend on robust circulatory flows of money, information, resources, and goods and services to support exchange, flush toxins, and nourish every cell at every level of our human networks. The circulation of money and information and the efficient use and reuse of materials are particularly critical to individuals, businesses, and economies reaching their regenerative potential.

8. **Seeks Balance**: Being in balance is more than just a nice way to be; it is actually essential to systemic health. Like a unicycle rider, regenerative systems are always engaged in this delicate dance in search of balance. Achieving it requires that they harmonize multiple variables instead of optimizing single ones. A Regenerative Economy seeks to balance: efficiency and resilience; collaboration and competition; diversity and coherence; and small, medium, and large organizations and needs.
The work of Fullerton has helped to understand an ideal state equilibrium of an economic system which is in harmony with people and planet, a balance between ‘dance’ and ‘steady state’. It has helped us at r3.0 to better understand the necessary weaving from nano to micro to meso to macro level connections of designing the r3.0 work ecosystem for the sake of arriving at supra-level wellbeing (the ultimate end as Donna Meadows once coined it\textsuperscript{113}), the balance of simultaneously developing Blueprints for all areas that need change in order to serve, as well as the bioregional focus for scaling up regenerative hubs into a new world economy design. This puts a whole set of new challenges on finance per se and ‘sustainable finance’ in particular. Fullerton used his 8 principles for the assessment of the shortcomings that we discussed in Chapter 1.2. earlier in this Blueprint.

Since taking note of Fullerton’s eight principles the pattern that we see is an upcoming waterfall of bioregional-based self-governed regeneration hubs that weave together from nano (personal) to meso (habitat) level. This can best lead to macro (system) level change of incentives over time. In this micro level (organisations, mainly companies) will become a follower if they want to be accepted in, mainly consisting of the SMEs all over the planet. The role of multinationals and how they can continue to exist is then challenged. It might be that many of them will disappear, as will global supply chains, and maybe even national boundaries as we know them right now. A new supply and demand regime based on thresholds & allocations creates new currencies, connected to system value that a bioregion produces. It would be a very different world from what we know right now. This is not utopia, a patchwork of that already exists. The question is how the finance sector will respond to these upcoming realities in attempts to allow ‘sustainable finance’ serving what’s needed for a regenerative & distributive economy.

3.1.2. NINE DISCLOSURE PRINCIPLES FOR A REGENERATIVE & DISTRIBUTIVE ECONOMY (R3.0)

r3.0, while creating its work ecosystem and series of Blueprints, assessed hundreds of reports from 2013 to 2017 in an attempt to look for its own understanding of a regenerative and distributive economy. In the Reporting Blueprint\textsuperscript{114}, the first ever Blueprint released, r3.0 offered 9 Disclosure Principles for a Regenerative & Distributive Economy. They were the basis for the design of the ‘6 desiderata’, a general clustering of activities in various sectors, and how different sets of capitals are aligned to that. Some of these show up in the Activation Factors, so don’t have to be presented here in this chapter.

Compared to Fullerton’s 8 Principles r3.0’s 9 Disclosure Principles are compatible, but were mainly used to define reporting recommendations, as presented in the Reporting Blueprint as the ‘New Impetus’ for reporting, and also the basis for other Blueprints that followed since then. We find them instructive when discussing the necessary activations for sustainable finance.

Here’s the visual and excerpt explanations\textsuperscript{115} from the Reporting Blueprint, the bold parts of the text have been highlighted to exemplify concrete needs that sustainable finance would also benefit from.
Figure 20: r3.0’s Nine Disclosure Principles for a Regenerative & Distributive Economy

- **Relevance** - describing the necessity to bring two principles together that in r3.0’s always belonged together, namely sustainability context and materiality. Current approaches in materiality integrating sustainability lack a clear recognition of context as described in chapter 2, taking into account the necessary thresholds & allocations. It is only through the necessary context that both the organization and their stakeholders (we prefer the term rightsholders) can truly assess how material a topic really is. Clearly, indicating materiality because certain stakeholders and the organization believe so is not enough to define relevance.

- **Reciprocity** - the recognition that there is an exchange up and down the information supply and demand chain; it clarifies the need of seamless data flows between micro, meso and macro (vertical dimension) as impacts on micro-level aggregate to impacts on meso level and influence global conditions on macro-level. *This principle demands a much clearer data architecture and design component. At this moment indicators on micro-, meso-, and macro level are mostly disconnected and it is difficult, if not even impossible, to build seamless multi-layer data pyramids to describe multi-capital and context-based sustainability success.* This principle also demands collaboration between different data collectors and aggregators. It also addresses the interconnectedness of different sorts of data from different silos (horizontal dimension). *There is a need for more research how siloed pieces of information from different sorts of capitals and different issue/topic areas are still connected through cause and effect.*
- **Circularity**— the necessity to define impacts from a circular economy perspective. The idea is that there shouldn’t be ‘a loser’ in a ‘value cycle’, the needed change from value chains (as a relic of the throughput economy and the take-make-waste past) is an integral part of defining success in a green, inclusive & open economy. **Circularity also supports the notion that when a negative impact isn’t tackled well it will bounce back,** an analogy to the planetary system and its circularity, e.g. increased nature abuse leads to weather extremes bouncing back on us over time, unforeseeable where, when, and how harsh. It also focuses on renewable and non-renewable material and biological streams, avoidance and abundance. Lastly, circular businesses and industry design in consequence will also have positive effects on social aspects through collaboration, less stress through lack of shortages and emerging innovation opportunities.

- **Mutuality**— the understanding that every action leads to reaction, and that **collaboration is better than competition that normally leads to losers in the value cycle and negative, non-systemically useful counter-reactions, so both reactions are most likely not serving a societal purpose.** This also addresses the ideas about sharing and collaborative business models in the interest to reduce footprint and increase handprints.

- **Connectedness**— the need to agree to making a contribution to the bigger ‘whole’, hardly visible in today’s corporate approaches. The idea that ‘there is no sustainable business in an unsustainable world’ isn’t just a nice phrase, it is the hard fact and reason for the need for the already discussed economic system design changes. **This principle is helping to understand the need for net positive or gross positive business models in an attempt to develop a right to exist and a right to grow as ‘connected business’.** It is also an underlying understanding that contributing to the bigger whole is necessity for every business to understand. The SDGs are a first helpful, but only intermediate, step to learn against ‘what’ such contributions are made, they also help businesses to understand thresholds, allocations of available resources and how the use of them is in line with availability in a one-planet world.

- **Redundancy**— The notion that while we are pushing innovations for more sustainability, a real test case for increased positive impact is **the proof that the old’ got redundant, or obsolete, meaning it will not continue to stay as stranded assets or in use in other parts of the world.** This will help clarify how the real sustainability contribution made globally. It addresses the ‘net effect’ of what has been done. Redundancy also helps to clarify micro-, meso-, and macro cumulative effects of non-circularity. The fact that we have an ever-growing ecological footprint while thousands of businesses are priding themselves with their sustainability efforts points to the facts that redundancy isn’t yet properly addressed. It comes back as various rebound effects, moving of old assets to other parts of the world, effects of stranded assets, and has to be seen in combination with demographic effects, technological change agendas, urbanization, world trade agreements, etc.

- **Modularity**— a lot of what sustainability addresses and what circular business models demand has to do with intelligent use of resources so that they aren’t losing value. It also looks at circular busi-ness model connections, material flows and their effective strengthening of each other. It addresses each industry in a different way and challenges systemic thinking.

- **Adaptability**— recognizing that circularity, multi-capital thinking and changes in the economic system design won’t be realized from one day to another, but that **there’s a journey to walk together. This demands a proactive and forward-looking governance, leadership and strategy.** It also means, at the downside of the journey, that certain practices won’t have a future in a green, inclusive & open economy. From our view we also see the development of the Blueprints and the cycle of new iterations of the Blueprints as needed adaptability of how our collective thinking is moving forward and is setting agendas, attracts new players into our work ecosystem (vertically and horizontally). Iterative progress while not claiming the unquestionable truth allows for improvement.
- **Humbleness** – in general we support the notion of being alert and thankful to the creation of goods & services of planet Earth, of which we humans are benefactors of. Every product & service humans created is enabled by that creation. It remains our house and as we are living in it we need to keep it in good order. How often do we hear and read about a company wanting to be the most sustainable player in their industry, and how often did we need to readjust our picture, leading to a lack of trust? The fact that corporations are one of the least trusted categories in society is a sad outcome of that, partially also influenced by the straight jacket set through the economic system logic, the 'survival of the fittest' attitude, the everlasting understanding that only a growing business is a successful business. Humbleness is a useful reminder of all the other principles pulled together here. We already know that reporting should be balanced, also in language. We see the need to acknowledge that success is limited in a stressed economic, ecologic and educational system (see the triple-e-failure discussed earlier). So being successful economically and building that success on the back of other capitals isn’t going to work. Doing no harm is just a minimum agenda.

### 3.1.3. SUMMARY OF FRAMING ENABLERS AS THEY ARE RELEVANT FOR SUSTAINABLE FINANCE

Summarizing both sets of principles for the purpose of Sustainable Finance a couple of aspects stick out:

- Sustainable Finance needs to generically serve a regenerative & distributive economy, which will be quite different from today’s globalized exploitative economy design, so it needs abstraction and anticipation through awareness and willingness to play into these coming changes. Backcasting from an ideal future is a helpful way of doing so, it has helped us at r3.0 to create a steady-fast picture of how we serve this ideal, e.g. through this Blueprint.
- Different players in the financial markets have different roles to play. What unites all of them is the recognition of a new to-be-found equilibrium between people, planet and prosperity.
- Quantitative growth and debt, the biggest triggers of financial market success, are likely to have no role in a regenerative & distributive economy. They need to be replaced by financial products allowing all sorts of client groups to stay with carrying capacities and social norms. It also means that finance products that ignore these need to disappear (which is a hard thing to imagine at this moment).
- Sustainable finance without recognition of rightsholdership (represented in various forms through the Activation Factors in chapter 4), thresholds & allocations as advocation for true costing, true benefiting, true pricing, true taxation and true remuneration seems will in the end fail to achieve what’s needed.

### 3.2. PROCESS ENABLERS

It is easy for us all to understand that developing a set of recommendations for sustainable finance can be seen as overly complex, given the variety of players involved and suppliers and consumers in the finance sector value cycle. At r3.0 we often aim at creating ‘simplicity’ that allows a new abstraction level and gets us away from ‘right or wrong’ dualisms. Fullerton’s 8 Principles in conjunction with r3.0’s 9 Principles allow to create a generic space in which such discussions can happen. Let’s now turn to the process enablers allowing necessary discussion and process design within the frame presented in 3.1. We explicitly look at two aspects here: building governing capacity and learning capacity.
3.2.1. EIGHT CORE DESIGN PRINCIPLES FOR GOVERNING A COMMONS
(ELINOR OSTROM / DAVID SLOAN WILSON)

Elinor Ostrom’s Eight Core Design Principles for the Governing a Commons add process requirements that enable groups to build self-governing capacity. This is why we mention them here. We refer to Ostrom’s principles as they were explained in the Journey of Economic Behaviour and Organization’s 2013 paper by David Sloan Wilson/Elinor Ostrom/Michael E. Cox: ‘Generalizing the core design principles for the efficacy of groups117’.

![Core Design Principles for the Efficacy of Groups](image)

Elinor Ostrom (1933 – 2012) was an American political economist whose work was associated with the New Institutional Economics and the resurgence of political economy. In 2009, she was awarded the Nobel Memorial Prize in Economic Sciences for her “analysis of economic governance, especially the commons”, which she shared with Oliver E. Williamson118.

The main importance of Ostrom’s work was to show that when certain conditions are met, groups of people are capable of sustainably managing their common resources. Moreover, the tragedy of overuse of any such common goods can be avoided without privatization or top-down regulation.
Ostrom’s 8 Core Design Principles were described in her book, *Governing the Commons*. They are relevant to nearly any situation where people must cooperate and coordinate to achieve shared goals; they can be used as a practical guide for increasing the efficacy of groups, although local tailoring is usually required for their implementation.

Here’s a bit of extra explanation for each of the principles:

1. **Clearly defined boundaries** – The identity of the group and the boundaries of the shared resource are clearly delineated.

2. **Proportional equivalence between benefits and costs** – Members of the group must negotiate a system that rewards members for their contributions. High status or other disproportionate benefits must be earned. Unfair inequality poisons collective efforts.

3. **Collective-choice arrangements** – Group members must be able to create at least some of their own rules and make their own decisions by consensus. People hate being told what to do but will work hard for group goals that they have agreed upon.

4. **Monitoring** – Managing a commons is inherently vulnerable to free-riding and active exploitation. Unless these undermining strategies can be detected at relatively low cost by norm-abiding members of the group, the tragedy of the commons will occur.

5. **Graduated sanctions** – Transgressions need not require heavy-handed punishment, at least initially. Often gossip or a gentle reminder is sufficient, but more severe forms of punishment must also be waiting in the wings for use when necessary.

6. **Conflict resolution mechanisms** – It must be possible to resolve conflicts quickly and in ways that are perceived as fair by members of the group.

7. **Minimal recognition of rights to organize** – Groups must have the authority to conduct their own affairs. Externally imposed rules are unlikely to be adapted to local circumstances and violate principle 3.

8. **For groups that are part of larger social systems, there must be appropriate coordination among relevant groups** – Every sphere of activity has an optimal scale. Large scale governance requires finding the optimal scale for each sphere of activity and appropriately coordinating the activities, a concept called polycentric governance (McGinnis, 1999). A related concept is subsidiarity, which assigns governance tasks by default to the lowest jurisdiction, unless this is explicitly determined to be ineffective.

Ostrom helped to disprove the idea held by economists that natural resources would be over-used and destroyed in the long run. She disproved this idea by conducting field studies on how people in small, local communities manage shared natural resources, such as pastures, fishing waters in Maine and Indonesia, and forests in Nepal. She showed that when natural resources are jointly used by their users, in time, rules are established for how these are to be cared for and used in a way that is both economically and ecologically sustainable.
3.2.2. NINE ELEMENTS OF EQUITY CULTURE / CIVIC FIDUCIARY
(MARCY MURNINGHAN)

Concluding our set of Enabling Factors are the following nine elements are drawn from the Equity Culture / Civic Fiduciary Test Lab that r3.0 Senior Research Fellow Marcy Murninghan is conducting. They are clustered in three groups of three elements that describe the baseline, actions and involvement of players needed to derive at an equity culture and civic fiduciary.

I. Paradigm / Principles / Purpose
   **Paradigm:** Accumulated wealth carries with it profound civic moral obligations, rooted in philosophy, theology and religious traditions, history, and law.
   **Principles:** These civic moral obligations are rooted in ethical principles that include "value", "equity", "the Good", "prudence", "fidelity", "faith" and "trust" (Latin fidūcia).
   **Purpose:** This paradigm finds expression in "economics" (from the Greek "oikonomia"), which at core involves community, reciprocity, and stewardship. "Reciprocity" refers to exchange relationships of goods and services that are governed by trust, in service to individual, community, and ecological well-being.

II. Policy / Program / Priorities
   **Policy:** Enable billions of dollars in financial capital, held in the portfolios of place-based, tax-exempt institutional investors ("civic fiduciaries"), to be more productive and accountable to the real economy and the public interest, rightly understood.
   **Program:** Cultivate "civic financial literacy" — e.g., mapping, meaning-making, motivating, and monitoring multipelita full return on investment” — through inclusive citizen taxpayer / shareholder and fiduciary trustee education, empowerment, and engagement.
   **Priorities:** Agreed-upon "common capitals" and public interest priorities, such as the UN’s Sustainable Development Goals or locally-determined ones in the overlapping realms of human rights, climate, and infrastructure.

III. Practice / Process / Partners
   **Practice:** Draw upon systems theory and the tools of action research / reflective practice to generate "usable knowledge" and competence among the pilot group of citizen taxpayers and place-based public fiduciaries.
   **Process:** “Communities of practice”, workshops modeled after Harvard Kennedy School’s “Executive Session”, wherein members increasingly take responsibility for curricular direction, collaborate on solutions, and co-create new knowledge — thus affecting prevailing wisdom and practice quite apart from intermediaries.
   **Partners:** Individuals and institutions seeking to reinvigorate responsible capitalism and citizenship, restore social and civic ties, and cultivate a political economy that’s rooted in civic virtue.

3.2.3. SUMMARY OF PROCESS ENABLERS AS THEY ARE RELEVANT FOR SUSTAINABLE FINANCE

As a summary of the two process enablers that we chose for this section we like to point out:

- As Ostrom shows, ‘when certain conditions are met, groups of people are capable of sustainably managing their common resources. Moreover, the tragedy of overuse of any such common goods can be avoided without privatization or top-down regulation.’ Is it hardly possible to create Sustainable Finance as an exercise led by just financial market players or their own initiatives. It is to be explored how the right setup, process criteria and sanction mechanisms are to be designed to allow Sustainable Finance to come into fruition.
Furthermore, Ostrom showed that when natural resources are jointly used by their users, in time, rules are established for how these are to be cared for and used in a way that is both economically and ecologically sustainable. Finance products like loans, equity and insurance are in the midst of these deliberations, and their design can have a major impact on how they can push and benefit from any such conditions.

Murnaghan’s nine principles give further advice on how to structure activation on necessary discussions between different constituencies, the need to educate and jointly discover pathways toward civic fiduciary and equity culture in light of the Commons. It is important to stress the need for a ‘cultural’ approach to this issue, which may allow a breakout in order to break through.

4. ACTIVATION FACTORS

Since its initial conception, the Sustainable Finance Blueprint has gestated organically, cross-pollinating best-thinking from across our networks (and beyond) to forge the ten preliminary recommendations (or “golden nuggets”) for transforming to a sustainable finance system. (We add a tenth in the process of drafting this Blueprint.) The “litmus test” for each golden nugget is whether it liberates energy toward regenerative and distributive finance.

To help frame this Blueprint, we categorize these recommendations into four clusters:

- Scope;
- Policy & Governance;
- Engagement; and
- Practice & Performance.
4.1. SCOPE

The first three "activation factors" frame the overarching scope of sustainable finance, along three axes as they relate to assets (i.e. vital resources across the multiple capitals – natural, social, human, manufactured, financial, etc...):

- From ESG Integration to Threshold Investing (Vertical Axis: Asset Sustainability)
- From Monocapitalism to Multicapitalism (Horizontal Axis: Holistic Asset Inclusion)
- From Impact Valuation to System Value Creation (Longitudinal Axis: Asset Regeneration).

The Blueprint will walk you through these below:

4.1.1. FROM ESG INTEGRATION TO THRESHOLD INVESTING (VERTICAL AXIS: ASSET SUSTAINABILITY)

"ESG does not, by nature, carry a true sustainability gene," says Global Reporting Initiative Co-Founder Allen White. He continues:

A company may rate very highly on an ESG score, but to say this company is an excellent sustainability performer is a very fundamentally different statement. [Being an excellent sustainability performer] means that the company is positioned to prosper for the long-term in a way that respects limits, thresholds, and norms that are externally defined, not simply defined by peer group comparison or internal targets and goals.124

The point here is simply that ESG has no causal tie to sustainability, because it lacks any direct linkage to "limits, thresholds, and norms," and therefore ESG is inherently incrementalist. Unfortunately, the finance field tends to conflate ESG with sustainable finance and sustainable investing, failing to recognize the "fatal flaw" (to riff on Fullerton's term) of this inherent incrementalism. In Act III of Finance for a Regenerative World, Fullerton identifies ESG as one of many "green shoots" that provide promising movement in the general direction of regenerative finance, but would need more robust ambition to move the needle to the degree needed. Fullerton writes:

In the past decade, the idea [of ESG] has moved from the fringe into the mainstream. Its move into the mainstream has occurred to a significant degree thanks to the idea that identifying and managing material ESG related risks was simply a proxy for good management...

And yet, despite this welcome awareness, little has changed in actual workings of the capital markets. The outcomes that matter to society — from carbon in the atmosphere to the numerous social injustices of the system — seem to stubbornly march on in the wrong direction. If ESG was expected to transform capitalism, it's not working...
ESG disclosure should be understood as a necessary and important development, but woefully insufficient in itself to trigger the transformation of business onto a truly regenerative path. As a result, sustainability remains a mirage.

The finance community doesn’t seem to understand the inherent limitations baked into the core definition and practice of ESG. Currently, the “state of the art” in investment is “ESG Integration,” a code word for embedding environmental, social, and governance factors into investment decision-making more comprehensively – ultimately, across all asset classes, portfolios, and investment theses. The United Nations Principles for Responsible Investing defines ESG Integration thus:

the explicit and systematic inclusion of ESG issues in investment analysis and investment decisions [or, put another way] the analysis of all material factors in investment analysis and investment decisions, including environmental, social, and governance (ESG) factors.\(^{126}\)

Tellingly, the term “sustainable” (and its variants) appears nowhere in this UNPRI primer on ESG Integration. The implicit assumption is that ESG Integration will lead toward sustainability, though it does not claim to actually achieve sustainability. UNPRI Managing Director Fiona Reynolds makes this explicitly clear in the introductory section of to its 2016 *Practical Guide to ESG Integration for Equity Investing*:

Anticipating that ever-more momentum, towards responsible investment in financial markets and towards more sustainability in the wider economy, will make “ESG integration” standard practice, the PRI hopes this guide will assist signatories and the investment industry as a whole in preparing for the new norm.\(^{127}\)

This statement introduces an increasingly pervasive (and pernicious) meme in the finance world: “towards more sustainability” as a “new norm.” Remember, Allen White tells us that sustainability is defined by “limits, thresholds, and norms that are externally defined” (emphasis added).\(^{128}\) Here, we have the head of UNPRI establishing, as a “new norm,” the inherently incrementalist practice of ESG, which moves not even “toward sustainability” (which would eventually achieve the objective, one assumes) but “toward more sustainability” (which, careful readers will note, still falls short of sustainability itself – ie “more sustainability” in usages such as this means more movement in the general direction of sustainability). In other words, a non-normative practice (in the sense of “norms that are externally defined”) is now magically a “new norm.” This essentially encapsulates the current mindset of so-called sustainable finance.\(^{129}\)

And Fullerton reveals that those most advanced in the finance field (i.e., the cream of the crop of “those who are trained in finance,” as Nobelist Shiller tells us, who are involved in “just about anything important that happens” because practically everything “is financed”) recognize this ruse.

Unsurprisingly, most sophisticated ESG investment professionals are not making the case that ESG transparency will lead to systemic change on the scale and timeframe that is required. Rather, they simply see it as smart investing and a good risk mitigation approach (for their investment portfolio, not society) that can provide early warning signals of future financial problems before they fully manifest.\(^{130}\)

Elsewhere, Fullerton extrapolates the implications of this shortcoming and other “fatal flaws of finance”:

This is a deadly serious reality.\(^{131}\)
In other words, we’re not fucking around here, folks – these distinctions between “toward more sustainability” incrementalism parading as a norm on the one hand, and *bona fide* sustainability that is *literally* normative on the other hand, carry profound existential implications for humanity and our biomes. Fullerton uses the terms “fatal flaw” and “deadly serious” not in their metaphorical senses, but rather in their strictest literal senses. Individuals, entire species, and ecosystems are *literally* dying due to the “valuable activities” that current finance fuels.

The solution? Integrate sustainability thresholds explicitly into investment and finance. Blueprint co-author Bill Baue formally introduced this notion in 2013, with co-authors Mark McElroy of the Center for Sustainable Organizations and Cary Krosinsky, Co-Founder of Carbon Tracker (in direct consultation with Nick Robins, who was then with HSBC and later co-chaired the UNEP Inquiry.) They introduced the concept thus:

Would you invest in companies that habitually operate beyond their financial budgets? Prudence suggests not. What about companies operating outside the thresholds of the ecological budget? Prudence speaks with the same tongue, but most investors aren’t listening.

Socially responsible investors have long applied ad hoc environmental screens that vary widely, but we are unaware of investment screens or strategies explicitly tied to objective, science-based planetary boundaries or ecological thresholds. Developing and implementing such an investment approach is a positive transformation.

We welcome this shift, which builds on the existing definition and practice of sustainable investing to more explicitly respect real-world budgets of natural capital – a necessary step if we wish to retain a world that can nurture ongoing growth of financial capital. Call it sustainable investing 2.0, or perhaps threshold investing. What it’s called matters less than that capital markets embrace it, so we can collectively turn our attention from the question of survival toward the creation of a thriving, sustainable economy.

Later in the piece, the authors note that “sustainability applies across the triple bottom line of environmental, social, and economic impacts. Here again, a thresholds-based investing approach applies.” They continue:

Whereas ecological thresholds typically set ceilings based on finite natural capital resources, social thresholds typically upend this logic, setting floors or foundations of human, social, and constructed capitals that produce thriving communities and societies. Think of a living wage, or the minimum amount of income needed to survive, as such a floor.

Adopting a thresholds-based approach represents a transformation for sustainable investing. While such a shift may seem disruptive and uncomfortable, we see it as inevitable. Indeed, we don’t see how professionals in the field can possibly assess the true sustainability performance of organisations, without taking contextually relevant social and environmental thresholds explicitly into account.

So we welcome this evolution, which brings the investment community into closer alignment with real world limits and demands, finally decoupling finance from fantasy. Herein lies opportunity, as investors that work within a safe and just operating space to nurture a sustainable and thriving world, which is really our only option going forward.
This Blueprint would extend the notion of “Threshold Investing” a step further, to apply thresholds beyond investing to integrate them into all finance. Indeed, until sustainability thresholds are applied, we do not see how investing or finance can call itself “sustainable,” as it would lack a primary mechanism for defining sustainability (and discerning “sustainable” from “unsustainable” investing and finance). It would be akin to traveling to a location you’ve never been before without a map or GPS, simply setting out without a sense of whether you’re heading in the right direction, how to budget time and resources, and how to know you’ve arrived. We prefer using a map, whether old school hard copy or Google Maps over aimless wandering (at least when arriving at the destination is requisite, as sustainability is).

Science-Based Targets and Threshold Investing

The primary way to effect Threshold Investing is by applying Context-Based Metrics – for example, calculate company (or portfolio) carbon footprints to see if they fit in toto within the carbon budget. The Science Based Targets initiative (SBTi) was founded in 2015 to provide guidance on methodologies for doing just this. So SBTi is perfectly positioned, it would seem, to help enable companies and investors to enact the best science – namely, IPCC’s 1.5C threshold.

Ironically, SBTi is doing the exact opposite – it is actively preventing companies and investors from applying the best science. It does so at the intersections of three levels – the company level, the portfolio level, and the systemic level.

1. At the company level, it invalidates the very methodologies that can comply with the 1.5C threshold, while the primary methodology it does validate cannot possibly align with 1.5C (until external experts set decarbonization scenarios across all sectors that the carbon budget covers);

2. And by allowing investors to decarbonize at the portfolio level while failing to square this with real reductions overall, at the systemic level, in what amounts to a kind of “shell game” where investors reduce the carbon footprint of their portfolio by selling shares of carbon intense companies – but this simply shifts share ownership to another investor without actually creating real-world carbon emissions reductions.

1. Company Level

The Science Based Targets initiative was established on the basis of a handful of methodologies that developed independently and interdependently – including

- The Context-Based Carbon Metric that was first ever implemented, at Ben & Jerry’s in 2006, by the Center for Sustainable Organization (CSO);
- The Climate Stabilizing Intensity (CSI) approach pioneered at British Telecom in 2008 in collaboration with Limits to Growth Co-Author Jørgen Randers;
- The Corporate Finance Approach to Climate-Stabilizing Targets (C-FACT) that Audodesk developed (based on CSI) in 2009.

These three methods all took the same approach of allocating shares of the carbon budget (fair slices of the pie, if you will) based on their economic contributions to the overall economy.
As part of its founding process, SBTi also created its own methodology – the Sectoral Decarbonization Approach (SDA) – which divvied up the carbon budget into sectoral slices. From the get-go, several SBTi Technical Advisory Group (TAG) members raised a red flag, pointing out that there needs to be decarbonization scenarios for all sectors (which wasn’t the case) in order to “mass balance,” or ensure that the parts add up to no more and no less than the whole.

Soon after establishing, SBTi performed an analysis where they purported that the very pitfall the TAG pointed out about the Sectoral Decarbonization Approach – the ability to tie into the overall budget – applied to the economic allocation approach. Accordingly, SBTi made a “decision to stop using economic intensity methods.” Following a scientific approach, SBTi would have shared its results with others – first and foremost its own TAG, but also of course with the creators of the economic allocation methods as well as the broader user and researcher communities – to see if others could validate these findings.

However, SBTi did not opt for this approach, and instead simply established its validation process in a way that approved its own methodology but disqualified the primary alternatives – without submitting this decision to due process. SBTi does not even disclose which method companies use to set their targets – thus making the determinations of its “validation” process what’s technically known as a black box. The public literally has to take SBTi’s word that the targets align with the science. This, too, contravenes the scientific process, which requires that results can be replicated.

Fast forward to 2018, when IPCC released its 1.5C target: the economic allocation methods could align with this new threshold immediately (one metric loaded the new SSP1-1.9 scenario as soon as its underlying data was released); the sectoral approach (SDA), on the other hand, is only further hamstrung – while there are still sectors lacking scenarios under the 2C scenarios, there are absolutely no sector-based scenarios aligned to the 1.5C target.

And it remains unclear if the International Energy Agency (IEA), which has come under significant fire for failing to advance an overall 1.5C scenario in its flagship World Energy Outlook, will include 1.5C sector scenarios in its new Energy Technology Perspectives (ETP) report (due out in September 2020, updating its 2017 version), upon which the SDA bases its sectoral allocations.

Table 2. Minimum ambition thresholds

<table>
<thead>
<tr>
<th>Long-term temperature goal</th>
<th>Absolute contraction method</th>
<th>SDA method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Absolute reduction targets AND Non-SDA intensity reduction targets</td>
<td>SDA physical intensity reduction targets</td>
</tr>
<tr>
<td>2°C</td>
<td>1.23% annual linear reduction rate over target period</td>
<td>Threshold determined based on SDA / IEA ETP 2DS scenario</td>
</tr>
<tr>
<td>Well below 2°C</td>
<td>2.5% annual linear reduction rate over target period</td>
<td>Threshold determined based on SDA / IEA ETP B2DS scenario</td>
</tr>
<tr>
<td>1.5°C</td>
<td>4.2% annual linear reduction rate over target period</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Figure 23: Science Based Targets, Target Validation Protocol, April 2019
So, this means that the Science Based Targets initiative is currently incapable of validating targets aligned to the best science – the 1.5C target – even though the means exist. And what its process enables for validation has no way of aligning with the best science, for now and into the foreseeable future. The reasons are not scientific – they are political.

2. Portfolio / Systemic Level

The same need to align with the overall carbon budget that companies must fulfill, also applies to portfolios. At the enterprise level, all a company can do is set its decarbonization pathway assuming all other companies will follow suit. The portfolio level is a significant step closer to the overall system, enabling assessment of whether portfolio-level decarbonization squares with real-world decarbonization.

In 2018, SBTi established a Financial Institutions project “to help financial institutions align their lending and investment portfolios with the ambition of the Paris Agreement.”

In early 2020, the 2°C Investment Initiative (2DII), which had partnered with SBTi on methodology development, announced it would exit the project partnership in protest over the direction the initiative was taking that would validate portfolios without holding them accountable to systems-level emissions (i.e. validating portfolios that aligned their own footprints without ensuring real-world decarbonization.)

So, there are now two distinct reasons why the Science Based Targets initiative is hampering investors (and companies) from applying the best science:

- first, SBTi made a “decision to stop using economic intensity methods,” and now that’s the only way to align with the 1.5C target (and the approach that’s easiest for investors, whose portfolios often cross multiple sectors, thus requiring potential apples and oranges calculations across various sectors); and
- second, SBTi opted against the 2DII recommended approach that would assess real-world decarbonization, not just portfolio decarbonization.

Box 1: Science Based Targets and Threshold Investing
4.1.2. FROM MONOCAPITALISM TO MULTICAPITALISM
(HORIZONTAL AXIS: HOLISTIC ASSET INCLUSION)

This singular focus on financial capital precludes the possibility of finance as currently practiced ever becoming sustainable because sustainability is a holistic process involving interconnected complex adaptive systems. It also means that efforts to achieve sustainability that retain prioritization of financial capital over other capitals are misdirected, as financial capital is an anthropogenic (or human-created) invention that can never supplant the primacy of natural capital.

The solution is to shift from monocapitalism to the more holistic approach of multicapitalism. The notion of multicapitalism was first introduced in 2014 by Mark McElroy, drawing on diverse strands of historical development around various forms of capital stocks and flows. The next year, in collaboration with former Unilever finance executive Martin Thomas, McElroy proposed an “ontology of multicapitalism” consisting of:

1. stocks and flows of vital capitals in the world;
2. organizations and their impacts on the capitals;
3. other parties (i.e. stakeholders) whose well-being depends on the capitals; and
4. norms, standards or thresholds for what organizations’ impacts on the capitals must be, or not be, to be sufficient, sustainable and duly supportive of stakeholder well-being.

So, multicapitalism involves more than simply attending to the multiple capitals, as the International Integrated Reporting Council (IIRC) sets forth in its 2013 Integrated Reporting (IR) Framework (encompassing elements 1 and 2 of the multicapitalism ontology). It also calls for two further elements: element 3 of attending to the wellbeing of the stakeholders (or rightsholders, as McElroy now calls them, following the footsteps of r3.0) who rely on these diverse vital capital resources, and element 4 of managing impacts on the multiple capitals within sustainability thresholds - in order to support rightsholder wellbeing (i.e. deliver on element 3).
Expressed succinctly, *multicapitalism* calls for operating within the carrying capacities of the capitals, a concept McElroy introduced as early as 2008, extending to anthropogenic capitals (human, social, etc...) the already-well-established application of carrying capacity to natural capital.\(^{152}\) Operating *outside* carrying capacity amounts to operating on what William Catton calls "phantom carrying capacity" in his 1980 masterpiece *Overshoot*:

> Phantom carrying capacity means either the illusory or the extremely precarious capacity of an environment to support a given life form or a given way of living. It can be quantitatively expressed as that portion of a population that cannot be permanently supported when temporarily available resources become unavailable.\(^{153}\)

This formulation precisely describes humanity's current predicament, as the Planetary Boundaries and Doughnut Economics research streams confirm that humanity is overshooting four of the nine ecological ceilings and shortfalling on *all* of the 12 social foundations.\(^{154}\) So humanity is in what Brewer calls "overshoot-and-collapse," which simply makes explicit Catton's point that carrying capacity is a "permanent" proposition -- "to speak of 'temporary carrying capacity' would be a contradiction," Catton states.\(^{155}\)

To make the point excruciatingly clear, the data confirm that our current economic system finances "valuable activities" (per Nobelist Shiller) that in aggregate transcend the carrying capacities of the multiple capitals (i.e. overshoot ecological ceilings and shortfall social foundations), which is untenable permanently, and thus is necessarily leading to the collapse of our economic system, and potentially to human society and civilization -- up to and including the extinction of the human species (alongside the 200 other species going extinct daily in the Sixth Mass Extinction).\(^{156}\) It is therefore imperative that humanity adopt a form of sustainable finance that operates within the carrying capacities of the multiple capitals if we wish to avoid collapse and extinction in the Anthropocene and instead nurture the kind of goldilocks conditions (a safe operating space) that Gaian self-regulation afforded in the Holocene.

IIRC and r3.0 are collaborating on a White Paper that further extrapolates the implications of the shift from *monocapitalism* to *multicapitalism*. Recently departed IIRC CEO Richard Howitt and r3.0 Managing Director Ralph Thurm explain this shift thus:

> A world in which businesses, investors and other actors in our capital markets embrace a multi-capital world would lead to more inclusive outcomes, including broad-based prosperity. It would maximize the value creating potential of the resources and relationships used by business. It would give investors a holistic understanding of how the business creates value, bringing into focus the financial implications of what have previously been called non-financial factors.

Multi-capitalist thinking reveals how ongoing value creation requires managing both horizontal and vertical dependencies:

- on the former, dynamic balance of all capitals upon which business models depend, in order to maintain healthy stocks and flows;
- on the latter, coordination amongst actors and institutions at different levels, to manage the aggregation of individual impacts into collective effects on the carrying capacities of capitals in the Commons.\(^{157}\)

In the context of this Blueprint, we believe that sustainable finance needs to apply across *all* the multiple capitals, as compared to assessing the impacts of social and ecological issues on financial capital.
4.1.3. FROM IMPACT VALUATION TO SYSTEM VALUE CREATION
(LONGITUDINAL AXIS: ASSET VALUATION)

Nobelist Shiller defines finance as supporting valuable activities – but what makes an activity valuable? In other words, how do we evaluate activities to discern which create true value – and which destroy real value. In the Holocene (in particular the last stretch of it, what Fullerton calls the Modern Era), humans perceived ourselves to have greater latitude of activity, as our collective consciousness could not yet encompass the concept of limits when it comes to ecological resources (bound as they are by the laws of thermodynamics). The concept of “trash” exemplifies this nonsensical notion – creating waste that natural systems cannot assimilate in human timescales only makes sense when collectively ignoring that limits exist.

In what Fullerton calls the Integral Era of the emerging Anthropocene, humanity is recognizing its geologic-scale impact, and an integral consciousness translates this to mean that all our waste must be assimilable, and more broadly that all our impacts must fall within the thresholds of the carrying capacities of the capitals – in other words, within the “safe and just operating space of humanity.” In this mind frame, trash is an alien concept – along with all other negative externalities that cannot be internalized (or assimilated by the instigator, or the earth); only positive externalities will make sense as “valuable activities.”

Current efforts in the field focus on “impact” as the state-of-the-art, exemplified in the practice of Impact Valuation.

Impact Valuation

The International Integrated Reporting Council (IIRC) set the ball rolling in its 2013 Integrated Reporting Framework (or <IR>) with its famous “Octopus” graphic extending attention from “outputs” to “outcomes” across the multiple capitals. Note that the graphic positions “outputs” within the business model, whereas “outcomes” cross the line from the business model into the external operating environment.
Work by the German chemical company BASF extended this thinking a step (or two) further – first from “outcomes” to “impacts.” This step essentially introduces the question of attribution: “how much of the outcome would not have happened otherwise” (i.e. without the contribution of the organization in question). The next step BASF introduced was “Value-to-Society” – in other words, what are the costs and benefits of these impacts to society at-large?164

It is instructive to witness how BASF implements this approach: it measures all its impacts (positive and negative), and puts a price on them (i.e. “monetizes” or “valuates” them) in order to be able to compare them in common terms.
Note that all of BASF’s social and economic impacts are positive, whereas all its environmental impacts are negative. The Value-to-Society approach then applies a nifty “sleight-of-hand” by “netting out” the impacts, enabling the company to claim that the positive social and economic impacts can “off-net” negative ecological impacts.

Unfortunately, thermodynamic reality does not abide such off-netting. Specifically, all impacts from all actors in a system aggregate to the macro level, and must remain within the “carrying capacity” of that system. In other words, impacts that appear de minimis at the micro (organizational) level can add up to be catastrophic at the macro (systems) level, as they can overwhelm the system’s ability to maintain their natural cycles of regeneration.

In technical terms, BASF’s Value-to-Society methodology applies a “weak sustainability” approach that allows off-setting amongst human, social, and environmental impacts, instead of a “strong sustainability” approach that measures impacts within systems, and exercises caution when adding up impacts across systems.168

The BASF approach has gained significant traction in the field. The Impact Valuation Roundtable (BASF plus a dozen other big companies, collaborating under the umbrella of the World Business Council for Sustainable Development) embraced the BASF Value-to-Society approach. The naming of the roundtable spotlights the fact that the approach applies a “valuation” approach, employing monetization to express the impacts in terms that are both “fungible” and readily understood by market actors.
Such was the success of this overarching approach that its primary architect, Christian Heller of BASF, spun it off into an independent initiative called the Value Balancing Alliance, which "aims to create a standardized model for measuring and disclosing the environmental, human, social and financial value companies provide to society." Heller explained the overall value of this kind of approach:

Moving from the traditional shareholder value concept to a "system value" approach, we truly value the impacts and interdependencies of society and business in a comprehensive system. This system serves as our foundation for shaping the future.

System Value Creation

We understand the notion of "system value" much differently. The concept was coined by Future-Fit Foundation Co-Founder and CEO Geoff Kendall, defining it broadly on the continuum from monocapitalist Shareholder Value through blended-capitalist Shared Value to multicapitalist Systems Value.

![Figure 29: Impact Valuation Roundtable 2017](image)

![Figure 30: Future Fit 2019](image)
The Future-Fit Foundation promulgates the Future Fit Business Benchmark, a framework that calls for companies to reach “a set of environmental and social thresholds that constitute the extra-financial break-even point for value creation, across the Triple Bottom Line.” As suggested in the graphic, this falls within a “Requirement for Society” that constitutes “System Conditions defining the thresholds within which society must operate to protect the possibility of a flourishing future.”

In other words, creating System Value requires operating (at the micro / company level and the macro / systems levels) within ecological, social, and economic thresholds. System Value is therefore explicitly distinct from Impact Valuation, which operates without any reference to ecological, social, and economic thresholds.

In the real world, human benefit does not erase adverse environmental impact; quite the opposite: human thriving relies on vibrant environmental viability. So, unabated environmental erosion (as is evidenced by the five-year results from BASF) eats away the future foundation that social benefit is built upon, undermining the system.

Creating System Value thus requires that systems thrive in healthy cycles of resource regeneration. Balanced systems create value from sufficiently abundant capital stocks to generate ongoing resource flows. So System Value creation requires cycling resources within their carrying capacities. So, truly sustainable finance will create System Value by living within our means to ensure all the means to live.

Perhaps the best definition of System Value creation doesn’t even mention systems! In the build-up to its 2013 <IR> Framework, IIRC enlisted partners to produce a set of background papers through a multistakeholder engagement process. EY pulled together a Background Paper on Value Creation that ended with the following final paragraph (the famous “Paragraph 58”):

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Ultimately, value is to be interpreted by reference to thresholds and parameters established through stakeholder engagement and evidence about the carrying capacity and limits of resources on which stakeholders and companies rely for wellbeing and profit... Interconnections between corporate activity, society and the environment and the purpose of the corporation should therefore be understood in terms of what the corporation, society and the environment can tolerate and still survive – that will be the main determinant of value. The challenges will be to reach agreement at corporate, national and international levels on what those thresholds and limits are, how the resources within those limits should be allocated, and what action is needed to keep activity within those limits so that value can continue to be created over time. [emphasis added]
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In its Data Blueprint, r3.0 produced an Integral Data Flowchart that integrates information across the multiple capitals, from both internal and external sources (at the micro, meso, and macro levels) that assesses performance within sustainability thresholds and allocations in order to create System Value.
4.2. POLICIES & GOVERNANCE

Sustainable Finance requires wise policy to put proper parameters on its enactment, and just governance to share benefit with all, not just some.

4.2.1. FROM FIDUCIARY DUTY TO STRATEGIC DUTY

The term “fiduciary” traces its roots back to the Latin *fidere*, “to trust” (an etymology it shares with “fidelity.”) The function of fiduciary duty is to maintain the integrity of the interests of beneficiaries. The Cornell Legal Information Institute explains the concept thus:

> When someone has a fiduciary duty to someone else, the person with the duty must act in a way that will benefit someone else, *usually financially.* [emphasis added]
Most case law on fiduciary duty ignores that last bit, and defines fiduciary duty from a purely financial perspective, prioritizing shareholder primacy. However, benefit can take many more forms that the purely financial. And even financial benefits rely on other forms of benefit, including the social and ecological foundations that underpin the finance system. So, in order to fulfill their duties, fiduciaries must advance not only financial but also social and ecological integrity. Matthew Kiernan, founder of Innovest Strategic Value Advisors, asserted this as early as 2004:

The ‘prudent fiduciary’ equation is slowly but surely being turned on its head; increasingly, fiduciaries are being seen as derelict in their responsibilities if they do not ensure that environmental and social risks are addressed.178

In 2005, the United Nations Environment Programme Finance Initiative published what’s commonly known as the Freshfields Report, so-dubbed after the prestigious law firm that explored the question:

Is the integration of environmental, social and governance issues into investment policy (including asset allocation, portfolio construction and stock-picking or bond-picking) voluntarily permitted, legally required or hampered by law and regulation; primarily as regards public and private pension funds, secondarily as regards insurance company reserves and mutual funds?179

They came to the conclusion:

Conventional investment analysis focuses on value, in the sense of financial performance. As we note above, the links between ESG factors and financial performance are increasingly being recognised. On that basis, integrating ESG considerations into an investment analysis so as to more reliably predict financial performance is clearly permissible and is arguably required in all jurisdictions.

It is also arguable that ESG considerations must be integrated into an investment decision where a consensus (express or in certain circumstances implied) amongst the beneficiaries mandates a particular investment strategy and may be integrated into an investment decision where a decision-maker is required to decide between a number of value-neutral alternatives.180

While this interpretation of fiduciary duty has yet to be universally embraced, investor implementation of ESG has mushroomed over the intervening decade-and-a-half. But the prevailing interpretation of fiduciary duty still hampers the potential for realizing the full benefit embedded at the core of the concept of fiduciary duty, holistically interpreted.

To more fully realize the potential of fiduciary duty as a driver of necessary transformation, lawyers Ken McNeil and Keith Johnson proposed that fiduciaries actually have a "Strategic Duty" – or a duty to align investment and corporate strategy with long-term value creation – and laid out a legal strategy for advancing this agenda in a 2018 law journal article.

Short-termism in corporate decision-making is as problematic for long-term investors as relying on a three-mile radar on a supertanker. It is totally inadequate for handling the long-term risks and opportunities faced by the modern corporation. Yet recent empirical research shows that up to 85% of the S&P 1500 have no long-term planning. This is costing pension funds and other long-term investors dearly. For instance, the small minority of companies that do long-term planning and risk management had a long-term profitability that was 81% higher than their peers during the 2001–2014 period—with less stock volatility that costs investors dearly as well. This corporate short-termism mindset is even more troubling given that at least half of the value of the companies in the S&P 1500 is generated by expectations for realization of future value. Long-term investors therefore face a long-term
expectations pipeline of hoped-for returns without a plan by corporations to back it up. The tragic result: this short-termism mindset appears to have a substantial depressing impact on long-term market returns while increasing long-term risk exposure. Both have contributed to the significantly underfunded status of many pension funds today.

Delaware courts, the primary referees of corporate director fiduciary duties in the United States, are so frustrated with the persistent effects of short-term pressures—including corporate fraud and compliance breaches—that they are actively encouraging investors to bring the right cases to help change the rules. This Article examines the effects of short-termism and the Delaware judiciary’s responses to it. It then shows how existing Delaware law could be extended to address the underlying causes of corporate short-term bias, rather than merely imposing punishment on the symptoms.

To substantiate their “actively encouraging” reference, they quote Delaware Chief Justice Leo Strine to demonstrate the Delaware court’s antipathy to short-termism, and its embrace of long-term value generation:

[M]ost of us think the market’s fetishistic preoccupation with quarter-to-quarter profits is stupid. Anyone who is honest will admit that this obsessional behavior contributed to wrongdoing at corporations like Enron and HealthSouth.

It is well known that businesses aggressively seeking profit will tend to push right up against, and too often blow right through, the rules of the game as established by positive law. The more pressure business leaders are under to deliver high returns, the greater the danger that they will violate the law and shift costs to society generally, in the form of externalities.

In a seminal 2010 paper, Chief Justice Strine builds upon these foundations toward the logical conclusion that the ultimate role of the corporation is to create “durable, long-term wealth,” which he further characterizes as “societal wealth” and finally refines to “sustainable wealth.”

Johnson & McNeil use this as a foundation upon which to build their case for “future value,” which is of course consistent with the needs of pension funds, with generation-spanning commitments to their beneficiaries. Pension funds are thus perfectly positioned to initiate litigation against companies for prioritizing short-term value extraction over future value creation. Johnson & McNeil end their article noting that there “would be no better time to bring such litigation than when a court encourages it.”

In the context of this Blueprint, the overarching implication is the need to engage in legal and social processes to return understandings and definitions of fiduciary duty that encompass not only financial considerations but also the ecological and social considerations that underpin finance. As well, the concept of fiduciary duty can be extended longitudinally to longer time horizons reveals a need for fiduciaries to act strategically to protect the interests of beneficiaries. In this sense, short-term benefits often undermine longer term benefits. As well, purely self-interested benefits often undercut broader benefits that are fundamental to support the foundations necessary for self-interested benefits. The upshot is that fiduciary duty, interpreted in this broader and more holistic sense, impels fiduciaries to compel the organizations they invest in to develop long-term strategic planning that takes into account long-arc developments (such as the destabilizing trends of climate change and rising inequality).
4.2.2. FROM ALPHA GENERATION TO BETA ACTIVISM

During the nearly seven decades that Modern Portfolio Theory (MPT) reigned, investors have dutifully diversified their portfolios and chased alpha (or benchmark outperformance) as a means of generating sufficient returns and hedging away risk. However, the Global Financial Crisis (GFC) of 2007-2008 introduced the concept of Systemic Risk, or "the risk to the proper functioning of the system as well as the risk created by the system itself." In other words, risk that cannot be hedged, because there’s nowhere to hide from it.

Former New York City Deputy Comptroller Jon Lukomnic made this realization of the folly of chasing alpha and MPT diversification a dozen years before the GFC.

One afternoon I had some time to just think. It’s 25 years ago, but I can remember it perfectly. I was sitting in my office, staring out at the trading desk, when it occurred to me that there a lot of wasted activity trying to meet and beat relative return benchmarks like the S&P 500. Instead, there actually was a remarkably simple formulation of the task I faced: I needed to find somewhere to invest $80 billion to earn a rate of return above inflation forever. And that had very little to do with benchmarks, bond math, derivatives, repo contracts, or any of the other myriad details I dealt with daily.

As with most aha moments, it was the simplicity of it that stunned me. But, so did the magnitude of the challenge, because it meant that I was facing what investors call a beta problem, not an alpha one. Investors call the systematic risk and return of the capital markets beta, whereas alpha represents returns above or below the market caused by an investor’s skill.

Here, Lukomnic spotlights the role of systematic risk as the “normal course of events” risks that accrue from systems outside the entity, while systemic risk is extraordinary risk of severe, non-linear events such as market collapses etc. The term systemic risk is primarily applied to finance, but it can also apply to other arenas, notably climate change. Systematic is broader, whereas systemic risk is more consequential. Accordingly, systematic risk “captures more of the non-diversifiable risks that affect beta,” Lukomnic points out, and adds:

Systematic risks can, of course, metastasize into systemic ones. The idea of moving to systematic was to try to get people to act before the risks become systemic.

Lukomnic (and colleague Jim Hawley, originator of the universal owner concept) point to recent implementation of this very approach by the Japanese Government Pension Investment Fund (GPIF – the largest public pension fund in the world, with assets under management of +/- $1.32 trillion), which focuses on “improving and enhancing beta, which it defines as the market as a whole, through corporate governance stewardship.”

Hiromichi Mizuno, the fund’s CIO and Executive Managing Director, noted that as a ‘universal owner’ (UO), the GPIF’s returns (especially long-term ones), due to its sheer size, are overwhelmingly a function of the market and of the systemic risks which affect the real-world economy, rather than beating a benchmark and achieving alpha, or a skill-based return above (but sometimes below) a specific financial market benchmark. As we discussed below, we call this type of a macro market and systemic risk focus ‘beta activism.’ Indeed, unlike the vast majority of institutional investors which either try to beat the benchmark through alpha-seeking trading, or which merely accept the return of the market through a passive indexation investment strategy, GPIF sees seeking alpha as entirely irrelevant to its investment strategies while it views the dominant risk/return concepts and metrics of the market as sub-optimal.
Lukomnic also points to the 2020 CEO Letter by Blackrock CEO Larry Fink, which equated climate risk with investment risk (a development that is creating a “fundamental reshaping of finance”) as an example of the third stage of corporate governance characterized by “beta activism.” According to Lukomnic, the fact that “Climate Risk is Investment Risk” was not news. But the fact that Blackrock was saying it, was. Blackrock is the world’s largest asset management company, with some $7 trillion of assets under management... That BlackRock wasn’t the first large investor to cite climate change as the core issue facing markets isn’t a reason for consternation. Rather, it’s a reason for hope. It shows that beta activism is now mainstream. It suggests that investors – though certainly not uniformly nor as vigorously as many would like – but, in the main, investors will, indeed, be climate allies.

Lukomnic points to a bevy of “third stage of corporate governance beta tools” investors can deploy to address systemic risk.

They can use policy and publicity. They can try to set standards, whether that is proxy access or reporting according to SASB and TCFD. They can publicize good climate research, counteracting some of the politically motivated and paid for climate denial social media.

Of course, one caveat is that reporting according SASB and TCFD have their own limitations that warrant addressing, as discussed earlier in this Blueprint.

4.2.3. FROM DIRTY LOBBYING TO POSITIVE POLITICKING

While much attention focuses on the direct impacts of the entities that investors fund, indirect impacts can be as significant, if not more so. One particularly important example is political influence, for example through lobbying, seeing as government legislation, regulation, and adjudication play such a fundamental role in overarching societal structures. Currently, much corporate lobbying seeks to weaken mechanisms intended to hold companies accountable for their adverse impacts on the Commons, often on the rationale that restricting markets hampers their efficiency. This dynamic is prevalent even amongst companies that purports to advance sustainability in other actions.

At the r3.0 Transformation Journey Program hosted by John Hancock in Boston, a participant from a socially responsible asset management firm proposed an additional Activation Factor of Positive Lobbying, to turn on its head the dynamic of corporate lobbying that entrenches negative impacts. Rhode Island Senator Sheldon Whitehouse brought the issue to light as early as 2016:

Washington’s dirty secret is that even the American companies that are really good on sustainability put net zero effort into lobbying Congress on climate change.

Eleven leading environmental and sustainable business organizations echoed this call in late 2019. Environmental Defense Fund President Fred Krupp captured the collective sentiment:

CEOs need to reduce climate pollution within their own company operations, and they also need to unleash the most powerful tool they have to fight climate change: their political influence. Corporate voices matter to Congress, but the vast majority of businesses have been silent on the need for climate policy, or even opposed to it. Now is the time to reverse that trend.
The Big Pivot Author Andrew Winston points out in a 2019 *Harvard Business Review* article that some in the US business community, including heavyweights such as Alcoa, Caterpillar, Dupont, and GE, galvanized around positive climate politicking a decade-and-a-half ago through the US Climate Action Partnership. But when the Waxman-Markey cap-and-trade climate bill failed in the US Senate in 2009, this initiative faded away.

A “Laundry List” of Positive Politicking Options on Climate Change

Winston believes the time is ripe for revitalizing positive politicking. "Here are some suggestions for what science-based climate policies could look like," he writes:

- A price on carbon, rising aggressively over time
- Phase-outs (yes, bans) on internal combustion engines in the next 10 to 20 years. A handful of countries have done this already: Norway’s ban starts in 2025, Sweden and Denmark in 2030, France and Sri Lanka in 2040.
- Aggressive standards for building energy efficiency to mandate net-zero buildings and/or renewable energy use on rooftops (e.g., California’s requirement for solar on all new homes starting in 2020).
- Investments in smarter design and development of cities (where 50-60% of humanity lives already) including higher density building, access to public transportation, light rail, and so on.
- Significant investments in clean infrastructure such as a high-capacity electric grid (the lack of which is actually slowing China’s amazing growth in renewables).
- Incentives for “circular economy” processes and innovation, such as material innovation, cutting edge recycling and repurposing, and repair and reuse.
- Tariffs on goods from countries with lower carbon standards, or what the Climate Leadership Council calls “border carbon adjustments.”
- Adaptation plans and investments for those being physically displaced by the sea level rise, with a focus on a just and smooth transitions.
- Retraining and relocation money for workers in key sectors who will be displaced by the transition to the clean economy.

Box 2: Positive Politicking Options for Climate Change

From a Sustainable Finance perspective, investors have leverage to advance such positive politicking, by engaging with companies in their portfolios to encourage them to both refrain from dirty lobbying and to proactively support positive government policies, not only on climate but across the sustainability spectrum. As well, investors can press companies for transparency on their lobbying efforts, to ensure walk/talk alignment.

And of course, investors themselves can do the same: refrain from dirty lobbying, engage in positive politicking, and practice transparency on their lobbying efforts and funding.
4.3. ENGAGEMENT

Finance flows through human interaction, so engagement is baked into the practice. It is in financier’s best interest to engage effectively with those managing the assets they invest in – be they enterprises or portfolios. In an age of Systemic and Existential Risks, investors must steward not only the financial returns of their portfolio companies, but also their sustainability performance, lest Enterprise Risk escalate to Portfolio Risk (and beyond to Systemic and Existential Risk).

4.3.1. FROM TEA & BISCUITS ENGAGEMENT TO FORCEFUL STEWARDSHIP

The practice of corporate accountability activism, including by shareholders, dates back to the advent of publicly traded companies. Within a decade of the initial public offering (IPO) of the Dutch East India Company in 1602, religious activists divested in protest over its business model predicated on the “generous application of warfare, blockade, piracy, assassination, imprisonment, plunder, terror, slavery, [and] bribery,” and the largest minority investor submitted history’s first recorded dissident shareowner petition against management over abuses of shareowner rights – such as keeping financial accounts secret, denying shareowners a say in selecting managers or creating policies, and refusing to pay dividends.201

The practice became institutionalized from the late 1960s onward, via corporate engagement and the filing of shareholder resolutions seeking proactive social and environmental practices, policies, and performance by socially responsible investment firms and religious investors (under the Interfaith Center for Corporate Responsibility, which formed for this purpose.) However, nearly a half-century of the practice failed to achieve the kind of sustainability outcomes sought by these initiatives.

In early 2015, Preventable Surprises Founder Raj Thamotheram and Senior Advisor Howard Covington (chair of the Isaac Newton Institute for Mathematical Sciences at Cambridge University) introduced the concept of Forceful Stewardship to describe investors’ fiduciary duty to engage portfolio companies assertively on addressing climate change.

If it reaches 4° or more, global warming may cause severe economic damage with the consequence that a significant portion of the value of a diversified equity investment portfolio will be placed at risk...

We estimated that in a plausible worst case for climate damage the value at risk in 2030 may be equivalent to a permanent reduction of between 5% and 20% in portfolio value compared to what it would have been without warming. This risk can be substantially lowered by a rapid energy transition to reduce greenhouse gas emissions...
Long-term investors should consider doing whatever they reasonably can to bring a rapid energy transition about and investment fiduciaries may have an obligation to do so. Possible action includes voting for resolutions to change constructively the business strategies of the companies in which they are invested, particularly the fossil fuel companies. The resulting collective action problem may be solved if pension scheme members and other beneficiaries test legally the obligations of their investment fiduciaries in this regard. We call this assertive approach by investors to taking action to reduce climate risk ‘Forceful Stewardship’.

Why hadn’t investors come to this before then? Why did they engage in what is politely labeled “constructive engagement,” which Thamotheram more provocatively calls “tea and biscuits” or even “tummy tickling” engagement?

Resolving the conflict of fiduciary obligations raised by climate damage requires forceful action by investors that they may find unconventional and uncomfortable. For all these reasons, institutional investors have so far mainly chosen to participate in collaborations to address aspects of climate change in more conventional ways rather than acting forcefully.

When it comes to implementation, Thamotheram and Preventable Surprises conducted a series of virtual dialogues to identify priority sectors for engaging in Forceful Stewardship, and landed upon the electric utilities sector. In 2017, Preventable Surprises produced a Guidance Note for investors to conduct “industrial scale” Forceful Stewardship across the entire electric utilities sector, to solve the “collective action” and “first mover” / “free rider” conundrums by triggering a wholesale sectoral shift.

More recently, Thamotheram penned a column bluntly entitled “Time to shit or get off the (ESG) pot.”

This crude phrase is a way to spur action. Vulgar it may be but it’s much less obscene than the devastation to human society and ecosystems if we don’t get off the path we are on, namely to 4°C warming by the end of century.

He proposes a 10-point plan for “getting real” (that explains “Why,” “What’s Not Good Enough,” and “What Challenges to Expect”) that aligns in spirit with this Blueprint’s Activation Factors. Of course, he starts with Forceful Stewardship:

Focus ESG efforts on stewardship that’s fit for purpose

Why? The only metric for investors to worry about is real-world decarbonisation. This means new business models and capital reallocation.

The best way to get this is through forceful stewardship by investors – supporting net zero by latest 2050 sector transition plans and activist strategies for laggards.

What’s not good enough? ‘Business as usual’ engagement with a few companies hoping this triggers sector change. Other strategies have other purposes: sending political signals (divestment or portfolio decarbonisation); making money from the crisis (green funds); managing sector risk (divestment) or transition risk (portfolio decarbonisation). Pretending that these other strategies address systemic risk is mis-selling.

What challenges should you expect? The other strategies are easier for investors and virtue signalling is tempting. Top down support for forceful stewardship is essential.
4.3.2. FROM COMPETITIVE ADVANTAGE TO COLLABORATIVE ADVOCATION

Harvard Business Professor Michael Porter introduced the concept of *Competitive Advantage* in the late 1970s, focusing on how market pressures (such as the threats of new entrants and substitute products or services and the bargaining power of suppliers and customers), can be leveraged to strategic advantage over competitors.\(^{206}\)

Fellow Harvard Business Professor Rosabeth Moss Kanter matured this concept by introducing the notion of *Collaborative Advantage* in the mid-1990s, likening partnership at the organizational level to marriage at the individual level.

Alliances between companies, whether they are from different parts of the world or different ends of the supply chain, are a fact of life in business today. Some alliances are no more than fleeting encounters, lasting only as long as it takes one partner to establish a beachhead in a new market. Others are the prelude to a full merger of two or more companies’ technologies and capabilities. Whatever the duration and objectives of business alliances, being a good partner has become a key corporate asset. I call it a company’s *collaborative advantage*. In the global economy, a well-developed ability to create and sustain fruitful collaborations gives companies a significant competitive leg up.\(^{208}\)
This last line is telling: Collaborative Advantage supports Competitive Advantage, she essentially states. In the intervening years, a set of systemic issues have emerged that impact entire sectors and even entire economies, where collective action is needed to resolve common challenges that threaten all players. Companies can respond via Competitive Advantage (manage the risks and capitalize on opportunities at the entity level better than competitors) – and Collaborative Advantage (work together in ways that advantage the collaborators over their competitors) are both possible responses, but they risk falling short on resolving the overarching challenges.

In instances like this, it makes most sense to band together to advocate for solutions that 1) can only be achieved through collective action and therefore 2) create collective advantage. An example of this kind of Collaborative Advocacy in the field of finance would be the question of collective shareholder advocacy, whereby asset owners, working in conjunction with their asset managers, coordinate amongst themselves to blanket entire sectors with a common shareholder resolution (backed by direct engagement) that asks all companies in the sector to address an issue.

This is precisely what Dutch Sustainable Finance Lab Director Rens van Tilberg proposed in a question to BlackRock CEO Larry Fink at the 2018 Mid-Year Outlook Conference. Fink had been boasting about the increase in ESG engagement staff at Blackrock, but van Tilberg pointed out that even these increased numbers were insufficient to handle sector-scale resolutions promoting collective action.

4.4. PRACTICE & PERFORMANCE

Sustainable Finance can only succeed through active implementation in practice, with performance measured accordingly.
4.4.1. FROM SCENARIO ANALYSIS TO TRANSFORMATION PLANNING

The practice of Scenario Analysis dates back to the 1950s: through his work for the US Military in the 1950s at the RAND Corporation, Herman Kahn "developed a technique of describing the future in stories as if written by people in the future" that he called "scenarios." At about the same time, Gaston Berger developed 'La Prospective,' a similar method of projecting "normative scenarios of the future which were to be used as a guide in formulating public policy."210

Scenarios are perhaps most closely associated with Shell, which helped pioneer the practice in the 1960s through a "pioneering team of economists, engineers and scientists [who] looked at how the future might unfold and the impact this could have on the company."211 When the 1973 oil embargo hit, Shell was better prepared than most companies: "Shell’s decision makers were mentally prepared for the worst because they had already imagined it."212

In his 1991 book The Art of the Long View, Former Shell Head of Scenarios, Strategy and Business Development Peter Schwartz defined a scenario as

> a tool for ordering one's perceptions about alternative future environments in which one's decisions might be played out. Alternatively: a set of organized ways for us to dream effectively about our own future. Concretely, they resemble a set of stories, either written out or often spoken. However, these stories are built around carefully constructed 'plots' that make the significant elements of the world scene stand out boldly. This approach is more a disciplined way of thinking than a formal methodology.213

Of course, the IPCC also employs climate scenarios. The Third Assessment Report, Climate Change 2001: The Scientific Basis, includes an entire chapter on Climate Scenario Development, which defines climate scenarios as

> a plausible future climate that has been constructed for explicit use in investigating the potential consequences of anthropogenic climate change. Such climate scenarios should represent future conditions that account for both human-induced climate change and natural climate variability. We distinguish a climate scenario from a climate projection ... which refers to a description of the response of the climate system to a scenario of greenhouse gas and aerosol emissions, as simulated by a climate model. Climate projections alone rarely provide sufficient information to estimate future impacts of climate change; model outputs commonly have to be manipulated and combined with observed climate data to be usable, for example, as inputs to impact models.214
IPCC has developed scenarios through its Coupled Model Intercomparison Projects (CMIP), with a fifth generation (CMIP5) featured in the 2013 IPCC Fifth Assessment Report (AR5) and a sixth generation (CMIP6) in development for the upcoming IPCC Sixth Assessment Report (AR6) due out in 2021.

In the lead up to the IPCC AR6, the energy modelling community has developed a new set of emissions scenarios driven by different socioeconomic assumptions. These are the "Shared Socioeconomic Pathways" (SSPs). A number of these SSP scenarios have been selected to drive climate models for CMIP6.

Specifically, a set of scenarios were chosen to provide a range of distinct end-of-century climate change outcomes. The IPCC AR5 featured four Representative Concentration Pathways (RCPs) that examined different possible future greenhouse gas emissions. These scenarios – RCP2.6, RCP4.5, RCP6.0, and RCP8.5 – have new versions in CMIP6. These updated scenarios are called SSP1-2.6, SSP2-4.5, SSP4-6.0, and SSP5-8.5, each of which result in similar 2100 radiative forcing levels as their predecessor in AR5.

Finally, SSP1-1.9 is a scenario intended to limit warming to below 1.5°C by 2100 above pre-industrial levels. It was added in the aftermath of the Paris Agreement when countries agreed to pursue efforts to limit the temperature increase to 1.5°C. The energy models and simple climate models developed to limit warming to 1.5°C played a big role in the special report on 1.5°C that the IPCC published in 2018. These new CMIP6 scenarios will now allow full climate models to explore climate changes and impacts at around 1.5°C warming.

**CO2 emissions in CMIP6 scenarios**

![Figure 33: IPCC Shared Socioeconomic Pathways (SSP) Scenarios](image-url)
The integration of scenario analysis into the Taskforce for Climate-related Financial Disclosure (TCFD) brought this practice onto investors’ radar screens. While this is a welcome development, it also needs to be accompanied by next steps.

Preventable Surprises, a r3.0 Advocation Partner whose Founder Raj Thamotheram and CEO Jérôme Tagger serve on this Blueprint’s Working Group, has long advocated for the next step of Transition Plans. As early as 2015, Preventable Surprises was calling for investors to call on their portfolio companies to produce transition plans “a first step towards market decarbonization, which is the pre-requisite for meaningful portfolio decarbonization.”217 Two years later, in 2017, Preventable Surprises published a Guidance Note for investors to call on energy utility companies (deemed the highest priority sector through extensive engagement with its network) to produce transition plans.

Why should investors and companies take the step from scenario to transition plan? For investors, the systemic risks arising from climate change are unpredictable, interrelated and pervasive. To fulfill their fiduciary responsibility to beneficiaries, particularly those who will still be dependent on their investments in the long term, they need to take action to avoid the worst consequences of climate change.218

In 2018, Preventable Surprises published an opinion piece that lays out the case for making the shift from scenario analysis (which they characterize as “akin to performing brain surgery on your organisation in public”) to transition planning.

We now need to move from asking for climate risk scenario analysis disclosure at selected companies to requiring low carbon transition plans across high impact sectors.

However, it will be easy for company management to delay moving from scenario analysis to emissions-reducing action. Delaying action used to be easy for CEOs to justify. Now any form of delay should be seen for what it is: pernicious and self-serving... Assessing each investment firm’s exposure to climate risk is a world away from knowing whether the biggest investors are doing what they reasonably can to mitigate that risk in the real world.

Climate-risk scenario-analysis disclosure is a new and contested area, and often results in complexity that stymies decision-making. And companies who do not want to do it often argue that it could force them to reveal information that could be useful to competitors... It is no wonder managers are so sensitive about disclosure, especially those who do not wish to act on the conclusions of authentic scenario analysis.

All of this plays to the hands of those practicing predatory delay, which US futurist Alex Steffen describes as “the deliberate slowing of change to prolong a profitable but unsustainable status quo whose costs will be paid by others”... Asking companies to provide scenario analysis gives them the opportunity to dither, in contrast to requiring them to disclose their transition plans on emission reductions. A transition plan addresses climate risk as a threshold, and outlines the pros and cons of a rapid shift to a low-carbon economy.
While transition plans are not in themselves action, they are the most essential step just before action. They show whether a company is thinking about the right things: not just operations and technical carbon matters but also changes in investments, governance, public lobbying, and remuneration.

A credible transition plan should set out targets and timeframes for action. This will send a powerful, positive signal to others in the investment ecosystem; the respected investment professionals at buy-side firms as well as influential sector analysts at sell-side and credit rating firms, proxy advisers, and auditors.

When sector-wide reporting occurs, early adopters of transition plans will be rewarded for aligning their businesses with the opportunities of a low-carbon economy. In stark contrast, scenario-analysis disclosure is mainly of interest to ESG analysts, not scientists measuring progress toward a sub-2°C outcome. Incremental change might eventually lead to important innovations but with climate change there simply is not enough time.219

In late 2018, shareholder activist As You Sow added its voice to this line of advocation, publishing a report in support of investor requests for transition plans by oil & gas companies.220 And in early 2020, Bank of England Governor Mark Carney (the brainchild behind the TCFD, and incoming UN Special Envoy on Climate Action and Finance221) threw his weight behind transition planning:

Every company ultimately has to have a plan for a transition and what the opportunities are and where the risks are...it’s the transition, stupid.222

Finally, the terminology has since transitioned – or rather, transformed. In 2018, Preventable Surprises Founder Raj Thamotheram co-authored an article with long-time Shell executive-turned climate activist Ian Dunlop making the case for a linguistic shift from “transition” – which suggests a smooth, gradual change – to “transformation,” which suggests a more radical realignment.

The time for gradual transition has long past ... what we need is transformation in many sectors... [T] he sectors which are heavy users of fossil fuels – autos and energy utilities especially – should be instructed by their investors to implement transformation plans to align with the Paris Agreement or net zero by 2050.223

4.4.2. FROM OUTSIDE-IN ENTERPRISE & PORTFOLIO RISK TO INSIDE-OUT SYSTEMIC & EXISTENTIAL RISK

This Activation Factor spans both a vertical (scale) continuum, as well as horizontal (internal / external) continuum. On the former front, we at r3.0 apply a “scale-linking”222 model that cultivates emergence through the interrelationship of the nano (individual), micro (enterprise), meso (industry / portfolio / habitat), and macro (economic / social / ecological systems) levels. Applying this vertical / nested model to the question of risk, r3.0 introduced a five-layered continuum in the Transformation Journey Blueprint that tracks distinct forms of interrelated risk, from the nano level of Career Risk to the macro level of Enterprise Risk to the meso level of Portfolio Risk to the macro level of Systemic Risk to the supra level of Existential Risk. (See Figure X)
The corporate and finance fields are accustomed to addressing the middle levels of Enterprise Risk and Portfolio Risk, and neglect the lower and higher levels. As well, these traditional approaches to risk assessment and management also focus on “outside-in” risk – in other words, impacts on the enterprise or the portfolio from external factors – and neglect “inside-out” risk, or the impacts the enterprise or portfolio exerts on its external environment, creating broader risks. These risks can of course circle back on the enterprise / portfolio as what we provocatively call “bite-you-in-the-butt” risk.

More precisely, the risk that enterprises and portfolios externalize aggregates to the point that it can destabilize systems and return as Systemic Risk. Unfortunately, the field largely neglects this dynamic.

In 2017, the Committee of Sponsoring Organizations of the Treadway Commission (COSO), the main body that provides guidance on enterprise risk management (ERM), issued the first revisions to its Framework in over a dozen year. And in 2018, in a first-of-its-kind move, COSO collaborated with the World Business Council for Sustainable Development (WBCSD) to issue Guidance on the intersection between ERM and ESG. While this development is clearly a significant step in the right direction, it focused exclusively on outside-in risk.

The field is starting to reconcile outside-in with inside-out impacts and risks. The EC Non-Financial Reporting Directive (NFRD) discussed earlier introduced the notion of “Double Materiality” that captures this dual-directionality.
And to reiterate: this Inside-Out Risk becomes problematic when externalized impacts aggregate to the degree that they transcend the systemic thresholds. This we call Systemic Risk, because overshoot of ecological carrying capacities and shortfall on social carrying capacities can trigger tipping points that lead to systemic collapses. And these Systemic Risks can aggregate to the degree they represent Existential Risk to the continuation of the human species (which, logic suggests, may not be immune to the thousand-fold increase in species extinctions compared to background rates).229

This Existential Risk is particularly associated with climate change, as addressed by Ian Dunlop and David Spratt of the National Centre for Climate Restoration in Australia (also known as "Breakthrough"230) in their 2018 report, What Lies Beneath: The Understatement Of Existential Climate Risk. The Foreword, by preeminent climate scientist Hans Joachim Schellnhuber, contextualizes its significance:

**What Lies Beneath** is an important report. It does not deliver new facts and figures, but instead provides a new perspective on the existential risks associated with anthropogenic global warming.

It is the critical overview of well-informed intellectuals who sit outside the climate-science community which has developed over the last fifty years. All such expert communities are prone to what the French call *deformation professionelle* and the German *Betriebsblindheit*.

Expressed in plain English, experts tend to establish a peer world-view which becomes ever more rigid and focused. Yet the crucial insights regarding the issue in question may lurk at the fringes, as this report suggests. This is particularly true when the issue is the very survival of our civilization, where conventional means of analysis may become useless.231
4.5. FROM ACTIVATION TO TRANSFORMATION

The Activation Factors mentioned above all operate within the existing financial and economic systems. However, one thing we know about existing systems is that they tend to entrench themselves, and resist displacement, even when they are created more harm than benefit – as seems to be the case now.

So, what’s needed is to complement Activation Factors with simultaneous development of new systems, encompassed in Transformation Factors. One way to visualize the relationship between Activation Factors and Transformation Factors is through the Three Horizons Framework conceived by the International Futures Forum and explained in a book by IFF member Bill Sharpe. Figure X shows an interpretation of the Three Horizons Framework by r3.0 Advocacy Partner Daniel Christian Wahl, which shows Horizon 1 as the current World in Crisis, Horizon 2 as the World in Turbulent Transition, and Horizon 3 as the Viable World emerging.

Activation Factors represent H2 developments, which intervene in the existing system to shift its trajectory. But they do not displace that system. Transformation Factors, on the other hand, represent longer-arc H3 developments that sow the seeds of new systems that build on the momentum created to H2 activity.

Another way to think of the distinction between Activation Factors and Transformation Factors is through the lens of the UNRISD Three-Tier Typology. Specifically, the Activation Factors align with Tier Two, which calls for “contextualized denomination” using “thresholds-based” approaches that promote transformation within the existing system. Transformation Factors align with Tier Three, which calls for “activating transformation” that “instantiate sufficient change within complex adaptive systems.”
In my view, we have two options: option one is to embrace the fact that a purposive and time-bound transformation entails non-linear, disruptive and by definition unpredictable forms of change and to build political institutions with the capacity, power and legitimacy to make transformative decisions of creative destruction. Option two is that we continue to talk about transformation without meaning transformation.

Daniel Hausknost, 2019

While [transformation is] a ubiquitous term, it is often not clear what should be transformed, by and for whom, and through what processes.

Ian Scoones, Andrew Stirling, Dinesh Abrol, et al, 2020

Global, anthropogenic problems are so severe, threatening the future sustainability of the planet and humanity, that major and rapid systems transformations are needed.

Michael Quinn Patton, 2019

The term transformation has emerged as a bit of a buzzword of late. However, as Daniel Hausknost points out in the above epigraph, much of this amounts to “talk about transformation without meaning transformation.” Therefore, we must first get clear on what transformation actually means: “what should be transformed, by and for whom, and through what processes,” as Ian Scoones and his colleagues point out in the epigraph quote. They continue:

Reflecting a critical stance concerning the current economic interests and practices producing unsustainable outcomes, some authors point to a need for fundamental structural changes to production and consumption. Others advocate acceleration of more incremental approaches for managing social, technological and ecological transitions, driven by combinations of technological innovations and progressive policy. Still others argue that change must emerge from below through networks of civic movements and grassroots activity that together, in often unruly ways, construct wider change. How do we make sense of these different ways of understanding and enacting transformation?
Ultimately, they distill these seemingly disparate approaches into three “complementary lenses” (roughly corresponding to the three sentences quoted above) through which to view transformation: Structural, Systemic, and Enabling. (See Table X) And they say “transformation will be required at multiple scales and organizational levels, and with deliberate normative steering.” This aligns with what we’ve been saying throughout this Blueprint – in particular, the normative nature of backcasting and thresholds, and the multi-scale / multi-level aspect.

### Table 1: Complementary Lenses of Transformation

<table>
<thead>
<tr>
<th>Approach</th>
<th>Definition/Emphasis</th>
<th>Pros</th>
<th>Cons</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural</td>
<td>Fundamental changes in the way production and consumption is governed, organized and practiced by societies</td>
<td>Highlights the prevalent economic and political processes and associated interests that serve to perpetuate current conditions</td>
<td>Lack of emphasis on environmental triggers and processes, individual agency and the possibilities of incremental change; Historical studies may downplay the role of complexity and serendipity</td>
<td>Emergent discourses on decarbonization or zero- or degrowth economic structures; Mass social mobilization around climate change and economic inequity</td>
</tr>
<tr>
<td>Systemic</td>
<td>Intentional change targeted at the interdependencies of specific institutions, technologies and constellations of actors in order to steer complex systems towards normative goals</td>
<td>Highlights interdependencies, connectivity across scale and geography, and the potential for non-linear shifts in system dynamics across scales; Emphasizes the role of ecological dynamics in social change and vice versa.</td>
<td>Low carbon energy transitions, focusing on technology-centred developments, modulated by incentives and disincentives enacted in policy mixes.</td>
<td></td>
</tr>
<tr>
<td>Enabling</td>
<td>Fostering the human agency, values and capacities necessary to manage uncertainty, act collectively, identify and enact pathways to desired futures</td>
<td>Recognizes potential of human agents for collective action; explicitly addresses asymmetries in power and circumstances of social injustice</td>
<td>Community led environmental action; hacker/maker spaces for grassroots innovation; co-creating approaches to sustainable local economies.</td>
<td></td>
</tr>
</tbody>
</table>

Other researchers exploring transformation look through the lens of tipping points. They note that we are nearing “dangerous tipping points in the Earth’s climate system,” applying the term to non-linear transformations in ecological systems that are undesirable. As a counter-balance, they propose that “social tipping points” can trigger similar non-linear transformations in social systems that are highly desirable – precisely because they avert from trajectories toward undesirable ecological tipping points.

Specifically, they identify Social Tipping Elements (STE) within which Social Tipping Interventions (STI) can trigger Social Tipping Points. For example, they identify the financial system as a STE, with fossil fuel divestment illustrating a STI that could “tip” in a “very rapid” timeframe (less than one year). As can be seen in Figure X, Norms and Value Systems represent another STE than can trigger tipping points in a timeframe they characterize as “very slow” (more than 30 years.)
Shifting from the realm of research to the realm of practice, Michael Quinn Patton is fomenting a bit of a revolution in the field of evaluation, which assesses government- and foundation-funded programs to assess effectiveness. In his 2019 book *Blue Marble Evaluation*, MQP (as he is endearingly referred to, by his initials) presents a set of 16 Principles that introduce a systems-based approach to evaluation.244

The Principles include three **Overarching Principles**, 12 **Operating Principles**, and one **Integration Principle**. Many of the principles involve transformation – first and foremost, one of the Overarching Principles:

**Transformative Engagement Principle:** Engage consistent with the magnitude, direction, and speed of transformations needed and envisioned.245

Several of the **Operating Principles** involve transformation, including:

**Transformation Fidelity Principle:** Ensure that what is called transformation constitutes transformation.

**Transformational Alignment Principle:** Transform evaluation to evaluate transformation.

**Theory of Transformation Principle:** Design and evaluate transformation based on an evidence-supported Theory of Transformation.248
Drawing on the work of MQP, Steve Lydenberg and Bill Burckart of The Investment Integration Project call for asset owners to implement “principles-focused evaluation” of what they call “systems-level investment,” because principles are “especially powerful rudders for navigating complex dynamic systems,” according to Patton.249 Extending this beyond asset owners to the broader scope of this Blueprint’s inquiry, the question becomes: how can we implement the principles of transformation in the context of the financial system specifically, and the economic system more broadly? The next section proposes a few preliminary ideas, framed as Transformation Factors.

5.1. TRANSFORMATION FACTORS

...people who have managed to intervene in systems at the level of paradigm have hit a leverage point that totally transforms systems.
Dana Meadows, 1999250

In a famous anecdote, Limits to Growth Author Dana Meadows tells the story of an international policy meeting where her frustration over the short-sighted solutions being proposed prompted her to burst forth and spontaneously brainstorm a list of “leverage points,” or “places to intervene in a system” where “a small shift in one thing can produce big changes in everything.”251 At the pinnacle of that list, she placed the “paradigm out of which the system ... arises” and even the “power to transcend paradigms.”252

“So how do you change paradigms?” Meadows asks. She answers this in two ways: at the individual and collective levels:

You could say paradigms are harder to change than anything else about a system, and therefore this item should be lowest on the list, not second-to-highest. But there’s nothing necessarily physical or expensive or even slow in the process of paradigm change. In a single individual it can happen in a millisecond. All it takes is a click in the mind, a falling of scales from eyes, a new way of seeing. Whole societies are another matter. They resist challenges to their paradigm harder than they resist anything else.

To contend with this societal resistance, she appeals to the wisdom of Thomas Kuhn, author of The Structure of Scientific Revolution that in 1962 placed the notion of paradigm shifts on the map, who noted that the “significance of crises is the indication they provide that an occasion for retooling has arrived.”253 Meadows then explained the opportunity thus:

In a nutshell, you keep pointing at the anomalies and failures in the old paradigm, you keep speaking louder and with assurance from the new one, you insert people with the new paradigm in places of public visibility and power. You don’t waste time with reactionaries; rather you work with active change agents and with the vast middle ground of people who are open-minded.

Tapping into this wisdom, we offer a series Transformation Factors, or elements that can help trigger tipping points of paradigm shifts. Specifically, we offer two sets of factors: Foundational Factors, which provide the undergirding bedrock for transformation; and Functional Factors, which provide the actual structural shifts in practice needed in order to realize transformation.

To trigger paradigmatic transformations, it is instructive to return to the “first principles.” Specifically, we predicated this Blueprint on the Enabling Factors of the Principles of Regenerative Economics, conceived by John Fullerton of the Capital Institute. Fullerton’s primary inspiration for the principles was Meadows, precisely because of her notion of paradigm shifts representing the highest transformative factor. But the foundation of his thinking on regeneration traces its roots back to Jan Smuts and his 1926 masterwork, Holism and Evolution.
5.1.1. FOUNDATIONAL TRANSFORMATION FACTORS

In this subsection, we introduce three Foundational Transformation Factors that create the platform from which paradigm shifts can launch:

- Holism
- Economies as Ecosystems
- Regeneration

5.1.1.1. HOLISM

The opposite of complexity is not simplicity; it is reductionism.
Nora Bateson254

Break the pattern that connects and you necessarily destroy all unity.
Gregory Bateson255

There's nothing wrong with the reductionist method so long as you don't confuse the method with the way the world actually works.
Wes Jackson256

In a recent social media exchange on a set of principles of regeneration proposed by someone else, Fullerton shared deeper background on his principles.

I've come to believe that principles are also context specific... So in that sense they are not "universal". One exception is holism (I think), which is why I sit it above my "principles" or "qualities". The key shift (and it is the point) is the shift from reductionism to a living systems paradigm... So again, it's all about holism, which Smuts defined as "the universal principle that explains matter, life, and spirit."

So undergirding Fullerton's Eight Principles of Regenerative Economics is the foundational (and universal) concept of holism. Following suit, we categorize the Principles as Enabling Factors, while considering holism to be the most fundamental Transformation Factor, as embracing holism requires a wholesale transformation from the dominant paradigm of reductionism. Here's how Fullerton frames it in his seminal 2015 paper:

The principles of holism, which underlie a systems worldview and drives the coevolutionary process in living systems and nonliving flow networks alike, must be extended to our understanding of the human economy, replacing the flawed, reductionist, mechanistic, and destructive logic of so-called "industrial efficiency."257

So Fullerton believes reductionism is the root cause of the dysfunctional outcomes of our financial and economic systems. Uprooting this dysfunction may seem “radical,” but that is simply because the term “radical” stems from the Latin term “radix,” he points out, which is also the source of the term “root.” In this sense, changing the status quo is radical precisely because it requires digging down to the root causes.
In a 2017 blog, building on the quotes in the epigraph to this section, Fullerton explains in depth the distinctions between reductionism and holism:

Admittedly, reductionism – breaking down what is complicated into its component parts so they can be analyzed and understood – has made inmeasurable contributions to the progress of human civilization. The laptop I’m typing on and the man on the moon are achievements made possible through the reductionist method. But as Wes Jackson says, “there’s nothing wrong with the reductionist method so long as you don’t confuse the method with the way the world actually works.”

Holistic thinker Allan Savory once illuminated for me that complexity is profoundly different than what’s complicated. An iPhone or an airplane is complicated. With time and ingenuity, it can be perfected and then mass produced, the same every time. We humans have become experts in making what’s complicated, thanks to our now well-honed expertise in reductionist reasoning and problem solving.

But complexity is a different animal altogether. A nation is complex. A city is complex. A business is complex. A rainforest is complex. War is complex. So too a marriage, a family, and our human self – our physical body, as well as our collective body/mind/spirit. The complexity of a living system is distinguished by the ever-changing context that surrounds it and affects it, with feedback loops and consequences impossible to fully comprehend in advance. Our political economy, in the context of culture and place, is such a complex living system.

So, holism is a **Transformation Factor** that must be applied at the conceptual level – it defies being confined into a simple recipe, as it is always context-specific. Indeed, the inclination to reduce it to a formula contradicts the very notion of holism.

### 5.1.1.2. ECONOMIES AS ECOSYSTEMS (OR, MONETARY DEBT AS ECOLOGICAL DEBT)

*This is an epochal moment when the world must recreate its economies as ecosystems.*

James Quilligan, 2019

Fullerton’s focus on reductionism echoes the point made much earlier, in the Debt section, by James Quilligan, which warrants revisiting here in its entirety.

To untangle the modern roots of this planetary dissociation, I keep going back to 17th century **Cartesian rationalism**, which taught that human bodies (and thus the whole of the biophysical world) are subordinate to human minds. This **mind/body split** — now embedded in virtually all of our top-down institutions, legal systems and worldviews — is the reason we still do not understand why the world’s social inequality and natural resource declines are actually two sides of the same coin.

This is an epochal moment when the world must recreate its **economies as ecosystems**. If the geometric growth of resources that is driven by the rational mind is not superseded by the regenerative growth that arises through the needs of living organic bodies, our highly complex societies will collapse. We will then lose our capacity for self-sufficiency and an extraordinarily large number of people will suffer from lack of food, water, energy and shelter. [emphasis added]
As a reminder, Quilligan led into these statements with this question:

how long until you grasp the real connection between our monetary debt and our ecological debt?261

So, Quilligan calls for transforming our economies by modeling them on natural ecosystems, thus underscoring the inextricable link between financial debt and ecological debt. What would such economies look like?

We have already seen the picture painted of ecological debt – Harald Sverdrup’s World7 data projects that humanity’s ecological reserves will start incurring by mid-century, at which point the ecological economy will start entering bankruptcy.

Another picture is painted by the Ecological Footprint analysis we encountered earlier, which factors in not only tangible resource availability and consumption, but also the more invisible resources of waste assimilation capacity. It finds that humanity survived (and some proportion thereof even thrived) on the earth’s resources (our “biocapacity”) that could be renewed on an annual basis until about 1970. After that, we started living on resources that we “borrow” from the future – ie ecological debt.

Meanwhile, our leading economists tell us that “our government will always be able to meet future obligations because it can never run out of money.” However, digging into the history of that very government’s history reveals a recognition of the clear interconnection between debt and ecological resources. In an “unofficial, & private” letter to William Henry Harrison in 1803, US President Thomas Jefferson shared an “extensive view of our policy respecting the Indians” that purported a desire to “live in perpetual peace with the Indians … by giving them effectual protection against wrongs from our own people”:

To promote this disposition to exchange lands which they have to spare & we want, for necessaries, which we have to spare & they want, we shall push our trading houses, and be glad to see the good & influential individuals among them run in debt, because we observe that when these debts get beyond what the individuals can pay, they become willing to lop th[em off] by a cession of lands.262

In other word, in order to secure lands held by Native Americans, US policy called for pushing them into debilitating debt in order to force them to sell their lands. This clearly demonstrates that US policy not only enacted the exact opposite of the “perpetual peace” and “protection from wrongs from our own people” Jefferson professes in this same letter, but also that Jefferson consciously perpetrated this wrongful manipulation onto the indigenous inhabitants using weaponized debt as a tool to pry away Native Americans’ prized possession: land. This example, grotesque as it is for its moral equivocation, illustrates the powerful relationship between debt on the one hand, and the underlying value of the ultimate ecological resource of land.

Things have not changed immensely in the intervening two centuries. Our system still jacks up debt to unsustainable levels (remember the Institute of International Finance data that global debt stands at 322% of global GDP, creating the need for an “exit strategy” from “greater debt imbalances and wealth/income inequality”) while simultaneously misappropriating the resource bounty of our lands (remember Harald Sverdrup’s World7 research on peak resource extraction.) Perhaps governments can continue to print cash as a means of propping up these monumental levels of debt, as Prof Kelton suggests, but in the face of continuing resource depletion from our global commons, what value does printed money hold?
So, the question arises, how would we structure an economy as an ecosystem? We have the seeds of the answers in this very Blueprint. Elinor Ostrom’s research on how to govern the commons won the 2009 Nobel Prize in Economics, but we have yet to apply her principles holistically to our economy. Doing so would require a radical shift from monocapitalism, which systematically privatizes and then extracts resources from the commons, in order to transform them into financial capital.

For example, Ostrom’s Core Design Principles call for “proportional equivalence between benefits and costs.” The very structure of monocapitalism contravenes this Principle in at least two ways: first, the ecological costs (which tend to be lasting) typically outweigh the financial benefits (which tend to be ephemeral) in the long run; and second, because monocapitalism privatizes the commons, the financial benefits generated by the commons accrue disproportionately (i.e. not with equivalence) to owners, while the costs accrue onto the commons (this dynamic is commonly referred to as privatizing the benefits and socializing the costs).

Shifting from such an economic system requires radical transformation, to an ecologically-based economy that would recognize that value ultimately derives from natural resources in the commons, so all financial infrastructure would need to derive value in ways that minimally protect these “common pool resources” (as Ostrom called them), or ideally support their enhancement. Accordingly, this second Transformation Factor – Economies as Ecosystems – leads directly into the third Transformation Factor: Regeneration.

5.1.1.3. REGENERATION

The purpose of a Regenerative Economy is to promote and sustain human prosperity and well-being in an economy of permanence.

John Fullerton, 2015

The Commons thrive on regenerative resources – think of fisheries whose stocks replenish naturally through reproduction, or Garrett Hardin’s classic example (in his famous “Tragedy of the Commons” essay) of a pasture that regenerates the grasses that cattle eat. Hardin introduces the tragic nature of this situation thus: “As a rational being, each herdsman seeks to maximize his gain,” and so continues to add cattle since his own benefit is clearly visible while the collective detriment to the common pool of pasture grass (overgrazing) is so incremental as to be invisible: “Each man is locked into a system that compels him to increase his herd without limit – in a world that is limited.”

The irony of Hardin’s essay is that he describes the tragedy as the “inevitableness of destiny,” when in fact Elinor Ostrom’s actual on-the-ground research found ample evidence of organic development of collective governance of common resource pools that defied this “inevitable” tragic outcome. So the tragedy is not inherent, but rather introduced.

The hint of what introduces the tragedy is in his use of the term “rational man” – echoing the notion of homo economicus, the rational actor who, unswayed by emotion or illogic, makes perfect financial decisions. Of course, such a being is mythical, but nevertheless exerts profound influence on our daily lives. The solution to the tragedy of the commons is to let go of the dysfunctional aspect – the assumption that humans by nature choose self-interest over the common good.

An alternative is to pursue self-interest that aligns with common interests. The most foundational collective interest is the continual regeneration of the resources we rely on to survive and thrive. In other words, we rely on resources that not only generate once and are gone when we use them, but also regenerate so we can continue to use them ongoingly.
Just as healthy ecosystems are inherently regenerative, so too would healthy economies need to be. And regenerative ecosystems maintain healthy “balance sheets” – they recognize the need for ongoing resource stocks to create ongoing resource flows, so they refrain from depleting resource stocks. What would an economy based on regeneration look like?

Let us return to the relationship between land and debt. Joe Brewer is planting seeds for transforming this relationship with the Earth Regeneration Fund he has proposed. His starting point is the “fragmentation of the Earth into parcels of privately owned land [that] includes how structural inequality arose through extractive practices related to the ‘capture’ and legal ability to own land.” The Thomas Jefferson quote in the previous section substantiates how this dynamic is rooted in the deep history and systemic underpinnings of colonialist capitalism.

The alternative?

There needs to be a clear set of mechanisms to re-invest the wealth taken from the Earth during prior times of extraction. These mechanisms need to enable landscapes to be regenerated as millions of us live through the extremely difficult period of overshoot-and-collapse of the dominant extractive economy. People will need (a) land to live on; while (b) participating in economic exchanges that maintain their wellbeing; so that (c) they can engage in regenerative practices for their landscapes that are (d) long-term and future oriented.

How?

1. Create a platform cooperative that manages the assets of the fund.
2. Pool funds for regenerating the Earth by making direct contributions from individuals and institutions with a vested interest in humanity continuing to exist.
3. Use the funds to acquire private land and place it in a community land trust.
4. Accumulate land across entire territories and remove it from the private market for whole-system regeneration efforts.
5. Support the education and livelihoods of those who train in regenerative design and devote themselves to Earth regeneration.
6. Set up monitoring systems that track progress toward regenerative goals.
7. Create a cooperative land bank that can re-invest value created by regenerative projects in the land and community whose livelihoods depend upon them.

See Figure 38 to visualize this structural flow:
The ultimate goal of such a fund is to create mechanisms for collective ownership and management of land in service to regenerative practices. The essence of this is to provide clear mechanisms for how a legal entity holds the land in a cooperative trust while enabling people to live on the land so long as they contribute to its regeneration.271

The Earth Regeneration Fund illustrates how the Capital Institute’s Principles for a Regenerative Economy can be integrated into a small-scale approach that has the potential to scale out significantly across the globe in ways that displace existing financial models based on extraction and dominance. In this way, the very enactment of such a fund serves to decolonize the financial and economic system while simultaneously activating regeneration of degraded lands.272

This effectively turns on its head the Jeffersonian practice of applying weaponized debt to confiscate and privatize land that had been stewarded regeneratively for generations and initiate the process of earth degeneration that has proceeded ever since. Clearly, the application of regenerative principles and practices to financial systems is fundamentally important for paradigm shifting to holism.

5.1.2. FUNCTIONAL TRANSFORMATION FACTORS

In this subsection, we introduce three Functional Transformation Factors that enable the enactment of necessary transformation to a Sustainable Finance System and a Regenerative & Distributive Economy.

- Multiscale (Bioregional)
- Post-Growth
- Mutualistic

5.1.2.1. MULTISCALE (BIOREGIONAL)

*It must not be forgotten that although a high standard of morality gives but a slight or no advantage to each individual man and his children over the other men of the same tribe ... an increase in the number of well-endowed men and an advancement in the standard of morality will certainly give an immense advantage to one tribe over another.*

Charles Darwin 1871273

Transformation is ... multi-dimensional, multi-faceted, and multilevel, cutting across national borders and intervention silos, across sectors and specialized interests, connecting local and global, and sustaining across time...

Michael Quinn Patton 2019274

“But does it scale?” is the unofficial motto of monocapitalism: the larger an enterprise scales, the greater financial value can be extracted. If we are to transform this financial and economic system, scale must be leveraged much differently. How?
Here, we appeal to evolutionary biology, which extends empirical learnings at the individual level to the collective level, as suggested by the initial observation by Darwin in this section’s epigraph. Eminent evolutionary biologists David Sloan Wilson (who we already encountered as co-author of the paper on the Eight Principles for Governing the Commons with Elinor Ostrom) and E.O. Wilson translated Darwin’s statement in the following maxim:

> Selfish individuals might out-compete altruists within groups, but internally altruistic groups out-compete selfish groups. This is the essential logic of what has become known as multilevel selection theory.

The notion of Multilevel Selection essentially holds that while natural evolution may selection for competition at the individual level, it selects for cooperation at the collective level. So, the notion of “competitive advantage” embedded in monocapitalism (and the assumption behind Hardin’s “Tragedy of the Commons”) is actually a faulty application of Darwin’s “selection of the fittest.” As Fullerton notes:

> What Darwin actually meant is that: the most “fit” is the one that fits best i.e., the one that is most adaptable to a changing environment.275

The most “fit” is also the one that applies what we at r3.0 call Collaborative Advocation – they not only collaborate, but they advocate for collaboration as a systemic orientation. Such collaboration applies at multiple levels – hence the term “Multilevel Selection.” Specifically, it applies both to individual organisms and to what David Sloan Wilson calls Social Organisms:

> Organisms are a product of natural selection. Through countless generations of variation and selection, they acquire properties that enable them to survive and reproduce in their environments ... human groups ... qualify as organismic in this sense.”276

How does multilevel selection intersect with our Multiscale Transformation Factor? We return to Joe Brewer:

> The insight from multi-level selection is that we have to look at the evolutionary patterns at multiple scales to see how each level interacts with the others.277

So, to apply multilevel selection as a Transformation Factor for paradigm shifting from our current Monocapitalist financial system to Sustainable Finance System within a Regenerative & Distributive Economy calls for a Multiscale approach that starts from the bioregional level. Why the bioregional level? Here’s Joe again:

> The thing about a bioregion is that it is largely defined by ecological functions in the landscape, yet is also broadly coherent as a shared cultural identity among otherwise diverse populations of people. In this way, it is a social structure that connects local activities with regional-scale planetary dynamics. Thus, the bioregion is a scale at which to functionally manage the relationships between local and global.

To visualize this relationship, see how the bioregional nesting in the meso level – sandwiched between the micro level of organizations and the nano level of individuals below, and the macro level of economic, social, and ecological systems above – can leverage transformations in both directions. See Figure 39.
This is precisely why we at r3.0 join Joe, as well as the Capital Institute’s Regenerative Communities Network, in working to “set up investment platforms that track the real value-exchanges in the local economy.”

Imagine if, Joe proposes,

human economies were able to track all of the value exchanges that occur locally and regionally. This includes “multi-capital” concepts that go well beyond money to include things like the social capital of trusting relationships; the institutional capital of functional organizations; the knowledge capital of expertise and practical skills; and natural capital of healthy ecosystems.

Build a platform that tracks all of these exchanges in a robust way and you have the food web for human systems — something you can use to create portfolios of investments and track progress toward shared goals. We have collaborators who are trying to build bioregional investment platforms that track all of the material flows in their local economy.

This is precisely what the Regenerative Communities Network is pursuing with its Regenerative Capital Lab.

5.1.2.2. POST-GROWTH

[The post-growth movement has long argued that equality can be a substitute for growth. By sharing what we already have more fairly, we won’t need to plunder the Earth for more.]

Jason Hickel 2019

Compound investing maximizes wealth extraction and concentration, ignoring the economy’s growing harmful environmental and cultural externalities, and needs to be globally counter balanced and made distributive.

Jessie Henshaw 2020
This Blueprint takes up the question of financial and economic growth in depth, and makes a strong case against Nordhaus’ Economic Growth Theory. The question this raises is, what do we put in its place? Post-Growth is our second **Functional Transformation Factor**, along with its kissing cousin, degrowth. The objective of degrowth, Jason Hickel lays out, is to scale down aggregate resource use, energy demand and emissions, focusing on rich, high-consuming nations, and to do this while improving people’s well-being.281

How? He proposes five first steps:

1. **Abandon GDP as a measure of progress** and either replace it with a more holistic alternative (like the Genuine Progress Indicator) or focus public policy on a series of social indicators to be improved (like well-being, health, good employment) and ecological footprint indicators to be reduced (like resource use, emissions, waste).

2. **Scale down throughput** by introducing progressive taxes on resource use, emissions and waste, or impose caps on these activities and tighten them each year... Reducing the material throughput of the economy not only takes pressure off ecosystems, it also reduces energy demand, which - as the recent IPCC report points out - makes the transition to renewable energy much more feasible.

3. **Shorten the working week and distribute available work more equally** in order to ensure full employment. Not only does a shorter working week have all sorts of positive ecological and social benefits, it also relieves pressures for growth. In the existing economy, as labour productivity improves people get laid off, and we have to generate more growth in order to create new jobs and mop up unemployment... To offset reductions in working hours, either increase hourly wages with a living wage policy or (to avoid hurting small businesses) introduce a universal basic income...

4. **Expand universal social goods and reinstate commons**, to ensure that people can access the resources they need in order to live well without high levels of income. This means generous, high-quality public healthcare and education, rent controls, affordable public housing and transportation, and access to public parks and recreational facilities. It could also mean a system of universal basic services, as UCL’s Institute for Global Prosperity has proposed. Scaling down aggregate economic activity might reduce private riches, but - as I have argued before - it needn’t reduce public wealth.

5. **Distribute national income more fairly** by introducing either high marginal tax rates on top incomes (like the 80% top marginal tax rate the US averaged from 1943 to 1983), or a maximum wage policy. Roll out a wealth tax, as Thomas Piketty has proposed, and a financial transaction tax. Close down secrecy jurisdictions and introduce a global minimum corporate tax to wipe out tax evasion. Use the proceeds of these taxes, and of the above-mentioned fees on resource use, emissions and waste, to (a) help fund the rapid rollout of renewable energy infrastructure, (b) contribute to a universal basic income, and (c) invest in public goods.283

In terms of applying Post-Growth structures in the financial system specifically, r3.0 Advocation Partner Jessie Henshaw proposes a Fiduciary Asset Investment Restraints (FAIR) as a financial investment practice to be required for use of the financial commons. Henshaw points out that

Compound investing maximizes wealth extraction and concentration, ignoring the economy’s growing harmful environmental and cultural externalities, and needs to be globally counter balanced and made distributive.
Accordingly, she proposes to

Flatten the curve of growing environmental and cultural exploitation, to reach a thriving peaceful economic climax.\(^285\)

The proposal plays on the idea of “fiduciary duty,” hinging on the dual definition of "duty" as an obligation, or a levy: "Either you do the duty or you pay the duty," Henshaw quips.\(^286\) In other words, FAIR applies a carrot-and-stick approach.

The carrot calls for significantly broadening the application of fiduciary duty, introducing an obligation for all investment to demonstrate respect for the ecological ceilings of Planetary Boundaries and the social foundations introduced in Doughnut Economics.

The stick calls for paying a duty for investments that exceed these limits to growth, creating a disincentive that also underwrites necessary remediation. She contends that this comprehensive compliance with the natural and social limits would “go the whole way in reigning in exponentially growing extractive investing.”\(^287\)

5.1.2.3. MUTUALISM

_I can't breathe!_
George Floyd 2020\(^288\)

_Human self-restraint may serve human purposes better than human dominance of the biosphere can._

_Mankind derives benefits from ecosystems not dominated by man, benefits that may be unavailable from ecosystems man does dominate._

William Catton, 1980\(^289\)

"I don't know what most white people in this country feel; I can only conclude what they feel from the state of their institutions," said author James Baldwin more than 50 years ago, after which he enumerated the evident racial inequities exhibited by religious, educational, real estate, and other institutions in the US. "Now, this is the evidence. You want me to make an act of faith, risking my life ... on some idealism that you ensure me exists in America, which I have never seen!"\(^290\)

A half century later, the evidence of institutionalized racism in the US (and beyond) is still incontrovertible. Now, the state killing of George Floyd -- 8 minutes and 46 seconds of a white policeman’s suffocating knee on his neck – has turned the tide of mainstream acknowledgment of this systemic dominance and dehumanization.

We humans apply this dysfunctional dominance dynamic not only to fellow humans, but also to the natural world that is our home. Ironically, such dominance is self-defeating – it harms not only the dominated, but also the dominator (as the Catton quote in the epigraph makes clear).

Relationships of mutualism and equality, on the other hand, create a living dynamic in which all thrive. Hence, the third Functional Transformation Factor (and the sixth and final Transformation Factor overall) is Mutualism, as a means of shifting out of the dominance paradigm that our current financial and economic system is built upon.
Analyzing the situation through our thresholds & allocations lens, we see that the dominant white culture, which includes the criminal justice system, long ago crossed the threshold into severe systemic dysfunctionality. We also see longstanding mis-allocation of resources -- compare police budgets to reparations budgets. To counter this systemic injustice, the Mutualism Transformation Factor calls for fair and just distribution of vital resources through systems that apportion first according to need.

Mutualism also requires decolonization. As noted earlier, dominance-based colonization is baked into the DNA of our current Monocapitalist finance and economic systems, so in order to transform, we need to decolonize finance and economics. To explore how this looks in practice, we turn to Vijay Kolinjivadi and Ashish Kothari, who critique the Green New Deal (GND) being proposed by countries in the "developed" Global North (the US and Europe) from a decolonization perspective from the so-called "developing" Global South. (It may make more sense to gauge "development" not by GDP but by cultural resilience).

It is insufficiently recognized that a GND which promises to transform economies in overly-developed regions of the world has significant implications for lives, livelihoods, and ecosystems in the "developing" world. Here, we examine the extent to which GNDs from the Global North can address systemic forces which rely on and perpetuate ecological degradation and inequality in the Global South. What do GND policies in North America or Europe imply for places like India, which continue to shoulder the costs of "progress" for privileged populations in the West and, increasingly, in cities of the Global South itself?

As such, the GND cannot adequately challenge the structures of capitalism and patriarchy, and from a global perspective remains rooted in "green" colonialism. It effectively perpetuates the quest for cheap raw materials and black and brown labouring bodies to achieve "green" growth.

Instead of seeking "sustainable development," Kolinjivadi and Kothari calls for "alternatives to development" grounded in Mutualism.

To find pathways that break from the dominant model of development, we must break from the socio-economic structures which undergird this model. We must search for alternatives to development, rather than an alternative form of development. This quest leads us inevitably to the realization that there is no one way, but rather a multiplicity of visions and paths, a pluriverse. This does not mean that anything and everything fits: approaches that undermine the possibilities of others to flourish cannot be part of this pluriverse.

In the end, Kolinjivadi and Kothari believe that a GND could serve an important function, if it excises the "green" colonialism from the current formulations. They see five key systemic transformations to enact such a shift:

**Ecological wisdom, integrity and resilience:** maintaining eco-regenerative processes that conserve ecosystems, species, functions, cycles; respect for ecological limits at levels, local to global; and infusion of ecological wisdom and ethics in all human endeavors.

**Social well-being and justice:** ensuring lives are fulfilling and satisfying, physically, socially, culturally, and spiritually; realizing equity between communities and individuals in socio-economic and political entitlements, benefits, rights and responsibilities; realizing communal and ethnic harmony, where hierarchies and divisions based on faith, gender, caste, class, ethnicity, ability, and other attributes are replaced by non-exploitative, non-oppressive, non-hierarchical, and non-discriminatory relations.
**Direct and delegated democracy:** establishing a democracy where decision-making starts at the smallest unit of human settlement, in which every human has the right, capacity and opportunity to take part, and builds up from this unit to larger levels of governance by delegates that are downwardly accountable to the units of direct democracy; and where decision-making is not simply on a ‘one-person one-vote’ basis but rather consensual while being supportive of the needs and rights of those who are currently marginalized.

**Economic democracy:** developing economic frameworks in which local communities and individuals (including producers and consumers, wherever possible combined into one as ‘prosumers’) have control over the means of production, distribution, exchange, markets; where localization is a key principle, and larger trade and exchange is built on the principle of equal exchange; where private property gives way to the commons, removing the distinction between owner and worker.

**Cultural diversity and knowledge democracy:** respecting pluralist ways of living, ideas and ideologies; encouraging creativity and innovation; ensuring that the generation, transmission and use of knowledge (traditional/modern) are accessible to all, and making spiritual and ethical learning and deepening central to social life.293

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6. **RECOMMENDATIONS**

As a global common good not-for-profit, r3.0 focuses on generating general specifications for necessary transformations, inviting users of the Work Ecosystem of our Blueprints to translate our generic Recommendations into more specific implementation specifications. These users span the continuum of the Direct and Indirect Constituencies listed in the **Audience** Chapter (Section 0.3).

In this sense, the Recommendations are already outlined in the structure of this Blueprint, so the function of this chapter is essentially to consolidate and reiterate the Recommendations that are embedded in the Enabling Factors, Activation Factors, and Transformation Factors.

- **Enabling Factors**
  - **Framing Enablers**
    - **Eight Principles of a Regenerative Economy**

John Fullerton notes, citing a Buddhist saying, "there are all sort of fingers pointing at the moon. My eight principles are my fingers pointing at the moon, but we can't confuse the fingers with the moon."294 His point: his principles are attempts to reduce the irreducible – the elements of a Regenerative Economy – so it is important to understand the Principles as means to an end, not the end itself. Given that current economic and financial systems are not based on living systems, applying these Principles is vital to aligning finance systems with the living world.
Recommendation: Apply the eight Principles of Regenerative Economics to align the design of financial systems with living systems dynamics.

- Nine Disclosure Principles of a Regenerative & Distributive Economy

“Sunlight is said to be the best of disinfectants,” US Supreme Louis Brandeis famously opined in 1913, pointing to the power of transparency. Building on this premise, r3.0 proposes a set of nine disclosure principles as key linchpins for achieving a Regenerative & Distributive Economy.

Recommendation: Filter reporting – and reporting standards and systems – through the nine Disclosure Principles of a Regenerative & Distributive Economy.

- Eight Principles for Governing a Commons

While Elinor Ostrom won the 2009 Nobel Prize in Economics, her work has gotten precious little uptake in the field, in part because a Commons-based challenges the foundations of privatization upon which Monocapitalism is founded. All the more reason why these principles are vitally important for integrating into the processes of regenerative and distributive finance systems.

Recommendation: Integrate the eight Principles for Governing a Commons into the foundational structure of finance systems.

- Eight Elements of Civic Fiduciary / Equity Culture

At its core, Fiduciary Duty is a civic duty, in that individual interests can never be divorced from the context of collective interests (undermining collective interests ultimately disaggregates down to the individual level). This is most apparent when considering the Fiduciary Duties of public benefit entities such as tax-exempt not-for-profit organizations (educational institutions) and pooled pension funds. Upholding this Civic Fiduciary ethic requires cultivating an equity culture – namely, one that supports social equity by preserving financial equity.

Recommendation: Apply the elements of Civic Fiduciary / Equity Culture as a complementary means of enhancing the Commons.

- Activation Factors
  - Scope
    - From ESG Integration to Threshold Investing (Vertical Axis: Asset Sustainability)

ESG Integration is currently viewed as a “ceiling” – the horizon of ambition – instead of rightly being seen as a floor. Likewise, Threshold Investing, while seemingly beyond the horizon, should rightly been seen as “table stakes” for engaging in the marketplace. Why in the world humanity should allow market transactions and structures that degrade living circumstances is beyond comprehension, but there you have it.

Recommendation: Align investment and finance systems with ecological and social thresholds that define a safe and just operating space for life on earth.

- From Monocapitalism to Multicapitalism (Horizontal Axis: Holistic Asset Inclusion)
While it is promising that the concept of the multiple capitals has a toe-hold in the corporate and finance fields, starting to topple the primacy of Monocapitalism, the next step of integrating the carrying capacities of the capitals is key to actualize full-fledged Multicapitalism.

Recommendation: Assess impacts of finance in the context of the carrying capacities of the capitals as a means of supporting the paradigm shift to Multicapitalism.

- From Impact Valuation to System Value Creation (Longitudinal Axis: Asset Regeneration)

Assigning a monetary value to ecological and social impacts associated with finance puts the cart before the horse. Of greater importance is to assess whether the impacts are sustainable – or not. Monetary valuation is useful only after assessing System Value creation – are the impacts enhancing ecological and social systems health, or are they degrading System Value below the sustainability threshold?


- Policy & Governance
  - From Fiduciary Duty to Strategic Duty

The concept of fiduciary duty assumes that agents act strategically, in the best interest of beneficiaries. Viewed holistically, the current interpretation of the fiduciary duty to maximize short-term financial returns turns out to be inherently un-strategic, as it undercuts long-term returns. Therefore, a reinterpretation of fiduciary duty is long overdue in order to realign it with strategic intelligence.

Recommendation: Campaign to redefine Fiduciary Duty to align with beneficiaries’ strategic best interests, namely, long-term System Value creation.

- From Alpha Generation to Beta Activism

The heyday of generating portfolio value by chasing Alpha is in the rearview mirror, as the enterprise level risk externalization that drives alpha has aggregated to the level of systemic risk, requiring investors to shift attention to the market level to reinforce the fundamentals of systemic stability necessary for portfolio value creation. Hence the need for Beta Activism, and the active advocacy to bolster the overall market instead of focusing on individual securities.

Recommendation: Abandon Alpha as the measure of investment success, and replace it with Beta Activism, or advocacy for healthy markets.

- From Dirty Lobbying to Positive Lobbying

Lobbying by corporates and financiers currently plays an insidious role in society, creating net sum degenerative impacts. If we are to retain the influence of lobbying, then it makes sense to redirect its impact to become fully positive.
Recommendation: Shift the orientation of lobbying from entrenching negative effects, such as exacerbating climate change, to supporting positive transformations, such as supporting climate action.

- **Engagement**
  - **From Tea & Biscuits Engagement to Forceful Stewardship**

The power of the purse carries with it commensurate responsibility to leverage this influence wisely. Current engagement tends to squander this resource, prioritizing social conventions that perpetuate dysfunctions, instead of asserting the full force of stock ownership, debt provisioning, and other financial levers to compel prosocial impacts over antisocial and pathological impacts that ultimately drain value.

**Recommendation:** Adopt an assertive stance of Forceful Stewardship through industry-scale engagement to shift entire sectors toward sustainability.

- **From Competitive Advantage to Collaborative Advantage to Collaborative Advocation**

Distilling Darwinism down to its essence, eminent evolutionary biologists David Sloan Wilson and E.O. Wilson famously stated, “Selfishness beats altruism within groups. Altruistic groups beat selfish groups. All else is commentary.”296 In other words, the idea of Competitive Advantage may work in tightly bound circumstances, but certainly not in a global economy, making Porter’s revered concept seem quaint – or dangerous. Rosabeth Moss Kantor’s kinder, gentler version of Collaborative Advantage still assumes a competitive landscape. The next evolutionary step is Collaborative Advocation, where the wise option is to collectively advocate for an economy bounded by ecological and social thresholds, where the goal is to support the wellbeing of all.

**Recommendation:** Recognize the merging of self-interest and collective interest when risks become systemic and existential, thus calling for joint advocacy for new operating system constraints aligned with ecological and social thresholds.

- **Practice & Performance**
  - **From Scenario Analysis to Transformation Planning**

The Taskforce for Climate-related Climate Disclosure moved the ball forward considerably when it normalized the practice of scenario analysis, but even this progress falls far short of what’s needed, given the ability of actors operating in a status quo that’s hostile to transformation to game the system. The science clearly tells us that transformation is not optional but rather necessary, so all actors need to produce viable plans for how they themselves intend to transform in accordance, and furthermore, how they intend to advocate for such transformations at the systemic level.

**Recommendation:** All finance actors produce specific plans for transformation in response to emerging realities, and compel the entities they finance to do the same.

- **From Outside-In Enterprise & Portfolio Risk to Inside-Out Systemic & Existential Risk**

Traditional approaches to risk fall short in two fundamental ways: they assume that risk is a one-way straight from the outside-in, and they neglect to address the cumulative effects of risk. Accordingly, risk must be reconceived as a two-way street (where externalities create inside-out risks that come back around as “bite-you-in-the-ass” outside-in risk) and as aggregating beyond the enterprise and portfolio level to the systemic and even existential levels.
Recommendation: Expand risk radars to encompass both outside-in and inside-out risk horizontally, and vertically extending to include systemic and existential risk.

- Transformation Factors
  - Foundational Transformation Factors
    - Holism

John Fullerton conceived of holism as the overarching “uber” principle undergirding all of the eight Principles for a Regenerative Economy. He traces all dysfunctions of the current finance and economic systems to their inherent reductionism. Therefore, the most primary factor for transformation is to embrace holism.

Recommendation: Base economic and finance system design on holism, recognizing the inherent interconnectivity of complex adaptive systems.

- Economies as Ecosystems

Although economies operate in the natural world, they fail to appeal to the living systems models for their structural design. It makes much more sense to model economies on the ecological and social ecosystems they operate within.

Recommendation: Design economies as ecosystems, following the principles that govern all other living systems.

- Regeneration

In a world bounded by entropy, degeneration is the default. The only way to counteract entropic degeneration is to tap into the regenerative capacity of natural systems, and bolster the regenerative predilections of human systems. The dividing line between degeneration and regeneration is sustainability, which must be adopted as the baseline for regenerative design.

Recommendation: Adopt regeneration as the general specification for economic and finance system design, embracing sustainability as the baseline.

- Functional Transformation Factors
  - Multiscale (Bioregional)

Transformation taking place at one scale can be reinforced or counteracted by transformation at lower and/or higher scales. Therefore, it is necessary to take a scale-linking approach of mutual reinforcement. The bioregion is the logical scale of primary focus, as it inhabits the “goldilocks” zone: just large enough to effect systemic transformation, but just small enough to be accessible to community-level intervention.

Recommendation: Adopt the bioregion as the locus of attention for scale-linking transformations up and down.
The doctrine of perpetual growth is self-evidently nonsensical, so mature cultures abandon it in favor of post-growth strategies predicated on fulfillment of wellbeing for all living beings within the carrying capacities of resource bases. Growth therefore becomes a variable, not a constant.

**Recommendation:** Shift to Post-Growth strategies that satisfy the core needs of all living beings within the carrying capacities of resource bases.

- **Mutualism**

Dominance-based economies and finance systems such as Monocapitalism, predicated on colonization, racism, patriarchy, extraction, and any other form of domination, cannot persist because they ultimately hollow out their foundations. Economies and finance systems based on mutualism, by contrast, are structured to persist because they support mutual benefit and enhancement.

**Recommendation:** Actively dismantle dominance-based economic and finance systems, replacing them with mutualistic economies and finance systems.
7. CONCLUSIONS

Achieving Sustainable Finance involves counteracting two powerful forces:

- **Degenerative Finance**, the predominant system of the status quo that’s currently cloaked in the neoliberal cape of perpetual progress, which “steals from the future” to create the illusion of progress in the present; and

- **Incrementalist Reform**, which assumes the existing economy can be tweaked into shape, ignoring the underlying structural dysfunctions of the dominance-based Monocapitalist system.

This Blueprint dedicates itself to clearly identifying these dual forces as a necessary first step toward counteracting them. Both are pernicious, but the latter is perhaps more insidious, as it currently dons the mantle of Sustainable Finance, and the prevailing power brokers in the field enable this mistaken labeling.

The stakes at play couldn’t be higher (*we’re not fucking around here, folks*), as the mainstream voices pointing toward the potential for ecological and civilizational collapse join the chorus. The band is playing a waltz as the deck tilts.

Accordingly, this Blueprint tackles these dual dynamics on three levels: first, it identifies the foundation of Enabling Factors necessary for shifting to a new economic and finance paradigm; second, it identifies Activation Factors that can be implemented immediately, within the existing system; finally, it proposes a set of Transformation Factors that can seed a more fundamental shift to new, regenerative economic and finance systems.

We readily acknowledge that these Recommendations are challenging, to say the least, in part because they transcend current practice and ambitious by leaps and bounds. When we consider our responsibility to the beautiful living species going extinct daily; to the current generation of those most impacted who are suffering and dying unnecessarily; and to our children and their children whose mortgaged future is paying for our current “risk adjusted returns,” we see no other option. Clearly, what currently passes for “Sustainable Finance” is a farce, and we express exasperation that we are such lone voices in pointing out the obvious flesh-clad nature of the emperor.

We hope that this Blueprint triggers a wave of shedding scales from the eyes of players in finance. The greater the consequences, the greater the opportunity to transform to a economic and finance system that creates thriveability for all.
8. ANNEXES

8.1. FULL ASSESSMENT OF SUSTAINABLE FINANCE INITIATIVES

"Unfortunately, the industry definition of what is sustainable investing is not very clear. Anybody can profile themselves as a sustainable investor, so there is a risk of greenwashing throughout the industry, where there is sometimes more marketing than substance."

Jens Peers, Global Chief Investment Officer of Equities & Fixed Income, Mirova

This very detailed annex serves as the basis for chapter 2.2. summary of existing and current sustainable finance initiatives and their effectiveness to actually deliver ‘sustainable’ finance. The part that describes current initiatives is very dynamic and was developed during summer 2019 and July 2020. Some of these initiatives will evolve further, and still the assessments here about their validity will continue to hold water as long as fundamental shortcomings aren’t addressed.

8.1.1. EARLY ATTEMPTS: FROM SRI TO ESG

"The term ESG was first coined in 2005 in a landmark study entitled Who Cares Wins," wrote UN Global Compact Founding Director Georg Kell. He continued:

The story of ESG investing began in January 2004 when former UN Secretary General Kofi Annan wrote to over 50 CEOs of major financial institutions, inviting them to participate in a joint initiative under the auspices of the UN Global Compact and with the support of the International Finance Corporation (IFC) and the Swiss Government. The goal of the initiative was to find ways to integrate ESG into capital markets. A year later this initiative produced a report entitled “Who Cares Wins,” with Ivo Knoepfel as the author. The report made the case that embedding environmental, social and governance factors in capital markets makes good business sense and leads to more sustainable markets and better outcomes for societies. At the same time UNEP/FI produced the so-called “Freshfield Report” which showed that ESG issues are relevant for financial valuation. These two reports formed the backbone for the launch of the Principles for Responsible Investment (PRI) at the New York Stock Exchange in 2006 and the launch of the Sustainable Stock Exchange Initiative (SSEI) the following year.

Earlier chapters of this Blueprint revealed the diverse interpretation of the term ‘Sustainable Finance’, and its need for concretization of what it really entails if it is to make a feasible contribution to the ideal of a regenerative and distributive economy. Looking back at its development from the late 1990s until now, ranging from complete denial of sustainability as relevant for finance and its players, the term ‘ESG’ (short for Environment, Society, Governance) derived as a first nearing and attempt to structure a) the areas, and b) the needed understanding of relevance of environmental, social and governance topics for decision-making in the finance sector. These early attempts, continuing from the Freshfields report, were driven by UNEP in combination with GRI, the first safeguarding environmental protection on international scale, the latter structuring data for interpretation of the performance of companies through a global multi-stakeholder process.
The main interest of GRI’s first-ever ‘Financial Markets Working Group’ was to reduce the complexity of 70+ indicators into an easy-to-get, easy-to-understand small indicator set about how sustainable any sort of organization is, a quite unrealistic demand at that point in time. Over the years two major developments happened: the development of a GRI ‘Sector Supplement’ for Financial Services, first published in 2008, describing the contributions of financial market firms to embrace these topics in their work, today reframed in their newest form as GRI ‘Sector Disclosure Financial Services’. In parallel, various players of different origin (financial sector, IT consultancies, sustainability non-profits and consultancies) started ‘ESG Benchmarking’ products, partially also deriving from early attempts of ‘Socially Responsible Investing’ (SRI) products. Over the years the Global Initiative for Sustainability Ratings (GISR) collected a list of more than 800 ratings, rankings and indexes for ESG performance measurement, and expected to in the meanwhile reaching more than 1,000 products.

It is important to interpret these early movements for the impact they have really had: they have helped to strengthen ‘ESG Performance Measurement’. In r3.0’s understanding this is now more than 20 years of experience in ‘numerator management’ (in the light of the Sustainability Quotient), and while sustainability reports from financial services companies and sustainability ratings and rankings mention ‘sustainability’ in their title they deliver no true sustainability message due to the lack of science-based and ethical norms that are needed as denominator.

8.1.2. MORE RECENT ATTEMPTS: FROM MICRO TO MACRO-LEVEL

The early attempts as described above refer mainly to allowing individual organizations to submit individual data to individual consumers of non-financial data for reasons of comparison and benchmarking. Neither were these data subject to investment decisions, nor were they even considered for more general change of the financial market principles. The below initiatives are first attempts to go broader into meso-level and macro-level transformation needs and started to question the overall design of the financial markets. We are looking at them in more depth and assess how far these attempts were effective with regard to creating ‘sustainable finance’ as defined in this Blueprint.

8.1.2.1. UNEP INQUIRY

According to the "About Us" section of the UNEP Inquiry website, the aim of this four-year (2014-2018) assessment reads as follows:

The Inquiry is a leading international platform for advancing national and international efforts to shift the trillions required for delivering an inclusive, green economy through the transformation of the global financial system. Since launching in 2014, the Inquiry has worked with more than twenty countries on national processes, published around 90 reports and working papers and serves as the Secretariat for the G20’s Green Finance Study Group...

The Inquiry has considered aspects of financial and monetary policies and financial regulations, and standards, including disclosure requirements, credit ratings, listing requirements and indices. We have also focused on the roles of the financial system’s rule-makers (central banks, financial regulators, finance ministries and standards institutions) alongside market-based standard-setters (stock exchanges and key international organizations and platforms). [emphasis added]
For the use in this Blueprint we lean towards the latest publications of the Inquiry, the 2018 Report *Making Waves*, the last of four reports that summarizes progress made, and the March 2019 *Sustainable Finance Progress Report* (covering 2018).

The UNEP Inquiry made considerable headway in the following ways:

● “The Inquiry’s initial phase of work, summarized in its first global report, concluded that in fact, rather than in aspirational theory, sustainable development was already the business of many of those tasked to govern the global financial system. [...] China would take the topic of green finance to the G20 during its Presidency in 2016. This subsequently became the Green Finance Study Group (GFSG), and the Sustainable Finance Study Group under Argentina’s G20 Presidency in 2018. This work stream would be co-chaired by the UK and China represented by the Bank of England and the People’s Bank of China, with UN Environment as the secretariat. This was the first time that a United Nations (UN) entity, let alone its environment agency, had been given a structural role in the finance track since the creation of the G20.” That is a tremendous achievement and opens up new corridors for engagement between nations.

● The Inquiry also clarified a *third way* to finance that is needed for sustainable development: “Pricing the negative effects of greenhouse gas emissions into markets for products and services is without a doubt a key to addressing climate change. Equally, there are legitimate reasons for providing what are effectively subsidies to private capital so that it provides finance for investments delivering public goods that the private owners of capital should not be asked to pay for. [...] The Inquiry was established with a view that these two tracks needed to be supplemented by a third – one that would address policy and market failures within the financial system itself.”

● The UNEP Inquiry then also clarifies transitional pathways from business as usual to a new sustainable model.
<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>BUSINESS AS USUAL</th>
<th>TRANSITION RISKS</th>
<th>NEW SUSTAINABLE MODEL</th>
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<tbody>
<tr>
<td><strong>Policy alignment</strong></td>
<td>The climate and sustainability agenda is primarily driven by ministries of environment, health, and education. Financial sector authorities are not involved in developing and executing climate and sustainability policies.</td>
<td>In response to the drive toward sustainability, multiple policies arising from different parts of the financial sector may be developed with limited coordination and within policy silos.</td>
<td>The role of the financial sector is an integral part of the development and execution of sustainability and climate policies. Incorporating sustainability considerations and the risks and opportunities that they entail becomes part of the financial sector culture, business, and regulation.</td>
</tr>
<tr>
<td><strong>Financial stability</strong></td>
<td>In the best of cases, only short-term environmental and social risks associated with specific projects are considered as having an impact on sector stability.</td>
<td>Increased risk aversion may occur as the broader long-term sustainability risks begin to be considered, measured, and managed.</td>
<td>Both short- and long-term sustainability risks are measured, priced, and managed with respect to specific financial transactions and systematically.</td>
</tr>
<tr>
<td><strong>Public finance effectiveness</strong></td>
<td>Interventions are at-risk and short-term, with limited measurement of costs/benefits; scale-up viability and long-term perspective.</td>
<td>Momentum may be lost behind innovative approaches as a result of increased selec- tivity of interventions.</td>
<td>Integrated interventions are focused on removing barriers to sustainable finance.</td>
</tr>
<tr>
<td><strong>Principles, cultures, and beliefs aligned to sustainability</strong></td>
<td>Climate and Sustainability considerations are absent or limited to niche subsectors in the financial system and executed by sustainability branches of firms.</td>
<td>As the understanding of the concept behind sustainability increases, stakeholders may focus excessively on risks, not opportunities.</td>
<td>Incentives across all stakeholders of the financial system will be aligned toward long-term sustainability.</td>
</tr>
<tr>
<td><strong>Market integrity</strong></td>
<td>Sustainability impacts not disclosed and/or integrated into prices. Disclosure initiatives are undertaken in short-term segments only.</td>
<td>Multiple disclosure initiatives lacking common standards may damage the credibility of emerging initiatives.</td>
<td>Disclosure standards are implemented and incorporated as part of standard financial markets’ integrity practices.</td>
</tr>
<tr>
<td><strong>Innovation and dynamism</strong></td>
<td>Financial innovation is limited and focused on sustainability.</td>
<td>At times of change and experimentation, many initiatives are bound to fail before successful ones are identified, tested, and rolled out.</td>
<td>Financial technology (fintech) and other mechanisms of financial innovation redefine the relationship among financial sector stakeholders with a focus on sustainable finance.</td>
</tr>
<tr>
<td><strong>Time horizon</strong></td>
<td>Focus on short-term sustainability risks.</td>
<td>Inherent uncertainty of long-term sustainability risks may discourage risk-taking.</td>
<td>Standards to measure and manage long-term sustainability risks and opportunities are adopted.</td>
</tr>
<tr>
<td><strong>New information and capabilities</strong></td>
<td>Know-how on sustainability and its implications to the operation of the financial system is limited within the financial sector. Limited market-relevant sustainability information is integrated into the financial system.</td>
<td>Disjointed efforts to develop sustainability information and capabilities lead to a mismatch of practices across the financial system.</td>
<td>Common information metrics are used broadly across the financial system and stakeholders have the know-how to incorporate such information into day-to-day operations and long term strategy formulation.</td>
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Source: Adapted from UNEEnvironment/World Bank Group (2017)

Table 3: Transitions to Sustainable Finance
The March 2019 Sustainable Finance Progress Report claims that “there is continuing momentum across the global sustainable finance policy arena. Although policies are not additive and assessing aspects of their effectiveness can be challenging, several observations can be made regarding the characteristics of sustainable finance policy innovation. There is growing evidence that demonstrates the sustainable finance policy over the last year has been characterized by strong growth, increased scope, and greater maturity.” This would lead to various new activity clusters:

Figure 40: Clusters of Sustainable Finance Policy Improvements

The Sustainable Finance Progress Report then also describes progress generally and nationally on 7 key defined success areas, namely:
- Provide strategic policy signals and frameworks;
- Promote voluntary principles for green finance;
- Expand learning networks for capacity-building;
- Support the development of local green bond markets;
- Promote international collaboration to facilitate cross-border investment in green bonds;
- Encourage and facilitate knowledge sharing on environmental and financial risk; and
- Improve the measurement of green finance activities and their impacts.

The report closes with the following statement: “In financial markets, the standout feature is one of sustainable finance becoming increasingly mainstream. Larger actors within the financial system are increasingly aligning themselves with sustainability outcomes and there is associated integration of sustainability into a range of financial services including data, product and risk methodologies. Sustainable finance practitioners have highlighted that this process has been facilitated by a variety of factors including the emergence of the SDGs as a universal framework and improved quality, consistency and relevance of data in this process.”

Being self-critical, the UNEP Inquiry also reflected on some of its shortcomings after 4 years:

- ‘Actions to build a sustainable financial system are multiplying and accelerating around the world. However, this impressive momentum remains insufficient to deliver the financing required for the 2030 Agenda or the Paris Agreement. Indeed, the vital signs of sustainable development give good reason for concern in terms of ecosystem decline, widening social fractures, and unrealized economic potential.’
A particularly important point that came up as a result of the UNEP Inquiry has specific relevance to what this Blueprint can aim to achieve: ‘[…] It became clear that approaching change with the view that national priorities could provide a starting point for a wider wave of changes would be more effective than blueprinting change in a more formulaic manner. […] More open-ended roadmaps were therefore needed – rather than blueprints – that encouraged coherence and ambition on the one hand, while allowing for flexibility, learning and contingent planning313.’

Although framed as about sustainable development, the Inquiry in the main focused on environmental and climate aspects, and within that principally on energy and carbon.

What does the UNEP Inquiry leave us with?

- lack a proper definition, cut-off criteria and principles of sustainable finance. The Inquiry therefore looks at very action-driven actions in a ‘second-step’ approach without offering a clear frame as the ‘first step’. What is sustainable finance really and what is it working towards? How is it dependent from a changed economic system? As a result, the Inquiry is a useful contribution to the meso and macro design needs of a financial system that can support more sustainability, but in a given and unsustainable economic system.

- There is much more focus on the growth of policies and number of ‘green’ products than assessing its real impact. It is assumed that they deliver ‘green’ within climate and the environment. The rest of triple bottom line remains uncovered,

- There is not one single notion of context-based and multicapital-based approaches as a precondition to sustainable finance. It is an unknown to us how meso and macro-level approaches can support the cause without them.

- The Inquiry also has a distinct preference with regard national activism. On the one hand it is showing the willingness of state actors to build regulatory infrastructure and networking on comparable issues, driving up numbers alone with a clear link to sustainable finance as described is…well, not sustainable finance per sé.

- None of the 10 Activation Factors (see chapter 4) is addressed in the Inquiry as a ‘necessary need’. There is just a light notion about inclusion in data, product and risk methodologies. That starts on micro-level normally before reaching aggregates on meso and macro level. But the micro level is hardly addressed anywhere.

- After the 2019 progress report (about 2018 developments) there is no mention of future progress reports. How will we know if future success and what we will recommend will collectively unfold not just more, but better policies globally? The website of the Inquiry mentions its mandate only covered the years 2014-2018. A second phase, involving the micro-level, and of which this Blueprint could be a basis of, seems sorely needed.

8.1.2.2. TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD)

The TCFD was instigated and installed in late 2015, based on a groundbreaking speech by Bank of England Governor Mark Carney, ‘Breaking the Tragedy of the Horizon - Climate Change and Financial Stability314.’ In its mission statement the Financial Stability Board Task Force on Climate-related Financial Disclosures (TCFD) says it ‘will develop voluntary, consistent climate-related financial risk disclosures for use by companies in providing information to investors, lenders, insurers, and other stakeholders. The Task Force will consider the physical, liability and transition risks associated with climate change and what constitutes effective financial disclosures across industries. The work and recommendations of the Task Force will help companies understand what financial markets want from disclosure in order to measure and respond to climate change risks, and encourage firms to align their disclosures with investors’ needs.’
In June 2017, the TCFD published its final TCFD Recommendations report and supporting materials, and in July 2017 presented these at the G20 Summit in Hamburg, Germany. Since then the TCFD and CDSB launch TCFD Knowledge Hub in 2018 and issued two Status Reports.

Core Elements of Climate-Related Financial Disclosures

“The Task Force structured its recommendations around four thematic areas that represent core elements of how organizations operate: governance, strategy, risk management, and metrics and targets. The four overarching recommendations are supported by recommended disclosures that build out the framework with information that will help investors and others understand how reporting organizations assess climate-related risks and opportunities. In addition, there is guidance to support all organizations in developing climate-related financial disclosures consistent with the recommendations and recommended disclosures. The guidance assists preparers by providing context and suggestions for implementing the recommended disclosures. For the financial sector and certain non-financial sectors, supplemental guidance was developed to highlight important sector-specific considerations and provide a fuller picture of potential climate-related financial impacts in those sectors.’

Figure 41: Core TCFD Elements

Climate-Related Scenarios

One of the Task Force’s key recommended disclosures focuses on the resilience of an organization’s strategy, taking into consideration different climate-related scenarios, including a 2° Celsius or lower scenario. An organization’s disclosure of how its strategies might change to address potential climate-related risks and opportunities is a key step to better understand the potential implications of climate change on the organization. The Task Force recognizes the use of scenarios in assessing climate-related issues and their potential financial implications is relatively recent and practices will evolve over time, but believes such analysis is important for improving the disclosure of decision-useful, climate-related financial information.’
The June 2019 second Status Report of the TCFD looked at progress made since the recommendations came out on 2017. It says: ‘[...] the Task Force reviewed—using artificial intelligence technology—reports for over 1,000 large companies in multiple sectors and regions over a three-year period. In addition, the Task Force conducted a survey on companies’ efforts to implement the TCFD recommendations as well as users’ views on the usefulness of climate-related financial disclosures for decision-making. While the Task Force found some of the results of its disclosure review and survey encouraging, it is concerned that not enough companies are disclosing decision-useful climate-related financial information. This could be problematic for financial markets if market participants do not have sufficient information about the potential financial impact of climate-related issues on companies.

Table 4: Summary of key findings of the second TCFD Status Report

<table>
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<tr>
<th>Disclosure of climate-related financial information has increased since 2016, but is still insufficient for investors.</th>
<th>More clarity is needed on the potential financial impact of climate-related issues on companies.</th>
<th>Of companies using scenarios, the majority do not disclose information on the resilience of their strategies.</th>
<th>Mainstreaming climate-related issues requires the involvement of multiple functions.</th>
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<td>Based on the TCFD survey, the artificial intelligence review, and input from external initiatives, the Task Force sees progress being made to improve the availability and quality of climate-related financial information. However, given the speed at which changes are needed to limit the rise in the global average temperature—across a wide range of sectors—more companies need to consider the potential impact of climate change and disclose material findings.</td>
<td>The top area identified by users of climate-related financial disclosures as needing improvement is for companies to provide more clarity on the potential financial impact of climate-related issues on their businesses. Without such information, users may not have the information they need to make informed financial decisions.</td>
<td>Three out of five companies responding to the TCFD survey that view climate-related risk as material and use scenario analysis to assess the resilience of their strategies do not disclose information on the resilience of their strategies. This is an important gap in disclosure for companies with material climate-related risks. But it is consistent with the Task Force’s understanding from discussions with various companies, industry associations, and other groups that companies are still early in the process of using climate-related scenarios internally, evolving their approaches, and learning how to integrate scenarios into corporate strategy formulation processes.</td>
<td>While sustainability and corporate responsibility functions are the primary drivers of TCFD implementation efforts, risk management, finance, and executive management are increasingly involved as well. The Task Force believes involvement of multiple functions is critical to mainstreaming climate-related issues, especially the involvement of the risk management and finance functions.</td>
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While most of the report is about further deepening of the key findings, the last chapter describes how the TCFD recommendations have also been integrated into other initiatives, differentiating ‘Implementation Initiatives, Reporting Frameworks, Governments and Regulatory Efforts and Initiatives Related to Scenario Analysis’.
So, is TCFD enough to get us where we need in Sustainable Finance as envisaged in this Blueprint? The answer is a straight ‘no’, because

- it is first and foremost an outside-in risk reduction mechanism as is the prominent risk management understanding of COSO. There is no focus towards ‘inside-out risk’, which for many years has been identified as a missing part. Even the GRI Guidelines since the earlier G3, G 4, G4.1, and now in its standards, emphasize the need for outside-in and inside-out risk perception.
- there is no reference to thresholds beyond referring to 2 degrees and 1.5 degrees Paris target setting as the broader frame. The translation of macro-based carbon budgets into sector and company allocations isn’t mentioned.
- there is no ‘activated’ mechanism to necessary transformation process implementation that risk management should actively be supporting. TCFD, in our view, is ‘stuck’ in stopping at the level of scenario planning and therefore negates ‘implementation risk’ or ‘transformation risk’ in its deliberations.

However, on the positive side, the broad uptake of TCFD in so many other initiatives, standards, regulatory efforts etc. is a great and surely needed effort in a change-resistant world of fenced standards, competition amongst initiatives, with due thanks to Mark Carney, Michael Bloomberg, and some other leaders that paved the way to a forum like the TCFD. We think TCFD could have way more impact when I just embraced these three mentioned critiques offered here.

8.1.2.3. EU ACTION PLAN FOR FINANCING SUSTAINABLE GROWTH

This subchapter will look at activities at European Commission level to foster Sustainable Finance. As the official communication\textsuperscript{319} from March 2018 pointed out: ‘At the end of 2016, the European Commission appointed a High-Level Expert Group on sustainable finance. On 31 January 2018, the expert group published its final report offering a comprehensive vision on how to build a sustainable finance strategy for the EU. The Report argues that sustainable finance is about two urgent imperatives: (1) improving the contribution of finance to sustainable and inclusive growth by funding society’s long-term needs; (2) strengthening financial stability by incorporating environmental, social and governance (ESG) factors into investment decision-making. The Report proposes eight key recommendations, several cross-cutting recommendations and actions targeted at specific sectors of the financial system. This Action Plan builds upon the group’s recommendations to set out an EU strategy for sustainable finance.’

It is remarkable that already from the outset of the plan for a broad Sustainability Finance approach, the focus was reduced to ESG inclusion, as imperative (2) points out. It is evenly remarkable that the focus on imperative (1) is embedded in the notion of a growth-based economic system. Both imperatives show that the key to Sustainable Finance, namely a financial system that is aligned with the imperatives of a green, inclusive and open economy – see r3.0’s Reporting Blueprint for the necessary principles and desiderata\textsuperscript{321} - were not even taken note of as the foundation. Cementing a Sustainable Finance approach in an unsustainable economic system paradigm is a recipe for failure from the outset. These reductions weren’t the mistakes, as we will show further below.

It is interesting to look at the clustering of the outcomes of the High-Level Expert Group first, before then turning to the Action Plan itself, and lastly, at some of the outcomes of the action taken, most prominently the recommended EU Sustainability Taxonomy and also connected to the Communication regarding the NFDR and deepening of climate disclosure.
The High-Level Expert Group Report clusters its recommendations in three major chapters, starting with 8 key recommendations:

1. Establish and maintain a common sustainability taxonomy at the EU level;
2. Clarify investor duties to better embrace long-term horizon and sustainability preferences;
3. Upgrade disclosure rules to make sustainability risks fully transparent, starting with climate change;
4. Key elements of a retail strategy on sustainable finance: investment advice, ecolabel and SRI minimum standards;
5. Develop and implement official European sustainability standards and labels, starting with green bonds;
6. Establish ‘Sustainable Infrastructure Europe’;
7. Governance and Leadership;
8. Include sustainability in the supervisory mandate of the ESAs and extend the horizon of risk monitoring.

In the following chapters additional ‘Other Cross-Cutting Recommendations’ (chapter 4), ‘Financial Institutions and Sector-Recommendations’ (chapter 5), and finally ‘Social and Broader Environmental Sustainability Recommendations’ (chapter 6) are given. At r3.0 we are surprised that some of the essential and foundational aspects of the later chapters, those that could have laid a true sustainability basis for the design of the Action Plan, weren’t chosen to set the Sustainable Finance Action Plan on proper footing from the outset. As r3.0 assesses the quality of any such political processes from a ‘necessary information infrastructure’ perspective, we would have expected the following aspects as crucial clarifications for key recommendations in a first step, before jumping to conclusions:

- ‘Think Sustainability First’ Principle (chapter 4.7)
- Natural capital and environmental challenges (chapter 6.2)
- Social dimension (chapter 6.1)
- Empower citizens to engage and connect with sustainable finance issues (chapter 4.1)
- Benchmarks (chapter 4.4.)
- Accounting (chapter 4.5.)

Overall, we think the High-Level Expert Group missed a crucial opportunity by de-emphasizing essential preconditions for true Sustainable Finance, which then led to continued agenda setting towards actions that can only be seen as ‘puzzle pieces’ without a proper definitory backbone. This Blueprint aims at pointing them out, deliver an alternative structure and come up with coherent recommendations.

The EU Action Plan on Sustainable Finance translated the recommendations by the High-Level Expert Group in 10 areas and set deadlines for their achievements. It is to acknowledge that the Action Plan also includes some of the de-emphasized aspects of the High-Level Expert Group Report, mainly because there are partner organisations that were able and focused on certain areas in which they could offer support to the EU, or the Commission was in a position to delegate. Examples of this are labeling, investment advice, benchmarks, rating & research, accounting, governance, and risk management.

The relation to risk management was prominently covered through relating to recommendations of the TCFD (Task Force for Climate-Related Financial Disclosure).
For this Blueprint we will concentrate on two major areas in which work has commenced prominently, based on the EU Action Plan, namely the development of an ‘EU taxonomy for climate change, environmentally and socially sustainable activities’ (Action #1) and the ‘revision of the guidelines on non-financial information as regards climate-related information’ (Action #9). Both action areas fell under the remit of a newly formed Technical Expert Group on Sustainable Finance (TEG)\(^{325}\), assisting in developing, amongst other things,

- an EU classification system – the so-called EU taxonomy – to determine whether an economic activity is environmentally sustainable;
- guidance to improve corporate disclosure of climate-related information.

As r3.0 we note from the above that this remit has an advanced reductionist scope on ‘whether an economic activity is environmental sustainability’ and ‘corporate disclosure of climate-related information’. It is hard to understand in how far the term ‘Sustainable Finance’ as it needs to be defined can still be used, even as understanding these activities in a broader patchwork of activities under the heading of Sustainable Finance. Apart from the reduction away from the definition of sustainability, we below also focus on the reduction of scope to ‘numerator management’, typical for ESG Integration, but not sustainability.

The TEG commenced its work in July 2018. Its 35 members from civil society, academia, business and the finance sector, as well as additional members and observers from EU and international public bodies work both through formal plenaries and sub group meetings for each work stream. The work of the TEG was first extended until end of 2019\(^{326}\), and then extended a second time until September 2020\(^{327}\), overlapping with the release of this Blueprint.

8.1.2.3.1. EU TAXONOMY FOR CLIMATE CHANGE, ENVIRONMENTALLY AND SOCIO-\n
SUSTAINABLE ACTIVITIES

During the course of this project the discussion about the EU Taxonomy took several turns. At r3.0 we had to adapt to changing decisions based on political opinions and resulting compromises. In this annex chapter we document the process by covering the first TEG report from June 2019 and the final TEG report from March 2020. This helps to also understand how the political process has evolved over time, where it has helped improve or water down the aspects that are of utmost importance to us in order to qualify for the definition of Sustainable Finance as we had laid that out in chapter 2.1.

First report by the TEG, June 2019:

On 18 June 2019, the TEG published a report on the EU Taxonomy\(^{328}\), which takes on board the feedback received on the first round of proposed activities and input from additional experts. The report is accompanied by a short user guide\(^{329}\), which provides a quick overview of what the taxonomy is, what it is not, and how to use it in practice, and by a summary of the technical report\(^{330}\). The TEG held a call for feedback on its report on EU taxonomy from 3 July until September 2019. In the autumn of 2019, the TEG analyzed the responses and advised the Commission on how to take the feedback forward, which eventually led to the second (and final) report, see further below.
The Taxonomy report states that ‘the EU Taxonomy is an implementation tool that can enable capital markets to identify and respond to investment opportunities that contribute to environmental policy objectives. Decisions by investors to allocate capital or influence company activities will be making a substantial contribution to climate goals and to the related SDGs. [...] It presents a list of economic activities which can make a substantial contribution to climate change mitigation and criteria to do no significant harm to other environmental objectives. It also presents a framework for evaluating substantial contribution to climate change adaptation. The list of economic activities covered in this report is not exhaustive and additional activities should be added to the Taxonomy in future. The Taxonomy proposed in this report is readily useful to investors, but the benefits of widespread use of the Taxonomy as a common language and reference point for markets, requires transparency by investors and companies alike. There is an important role for practical, disclosure-based regulation to help inform financial decision making and enable market participants to respond to the EU’s goals for financing sustainable growth.’

On page 31 the Taxonomy report clarifies ‘substantial contributions to mitigation objectives’. Here a ‘zero net emission economy by 2050’ is mentioned:

![Decision tree to identify substantial contributions to mitigation objectives](image-url)

Figure 42: Decision tree to identify substantial contributions to mitigation objectives
This leads to another decision tree about when an activity is included under the logic of the EU Taxonomy.

![Decision Tree](image)

**Figure 43: Decision tree for the inclusion of economic activities in the EU Taxonomy**

*Activities that are not classified could be assessed (and included) at a later stage.*

**Related to the lifetime of the asset.**

***In order to qualify as sustainable, the activity should also not significantly harm to other objectives***

As this figure expresses the need for thresholds, we can state that these thresholds need to comply with the above mentioned zero net emission economy by 2050. Selected macro-sectors and economic activities for climate change mitigation are then shown as examples. This is followed by an additional chapter about climate change adaptation, discusses the availability of data and at what costs, estimates about the economic impact of the EU Taxonomy, investment gaps that need closure, as well as cost and benefits for various stakeholders (which we are not going deeper here).
A particular concern to r3.0 is the way how the report deals with the definition of thresholds:

To ensure the broadest usability of the Taxonomy possible, the TEG had to arbitrate between granularity and flexibility as well as between complexity and clarity. A very granular Taxonomy, which uses precise metrics and thresholds, is expected to provide clarity and to minimize the risk of greenwashing. Nevertheless, there is a risk that requirements that are too granular and stringent lower the willingness of stakeholders to take up the Taxonomy, due mainly to the costs to access the necessary data and adapting their internal processes. On the other hand, more flexibility in the definition of screening criteria may facilitate the use of the Taxonomy but increase significantly the risk of divergent interpretations and greenwashing. Another challenge regarding the definition of the screening criteria is setting the adequate level of thresholds. Setting too low or too high thresholds, which do not reflect best market practices, would undermine the Taxonomy’s ultimate goal of redirecting financial flows towards sustainable investments. Consequently, the selection of the Taxonomy’s thresholds has been carefully considered, based on existing standards and consultation processes with experts in the relevant sectors.

This explanation makes it clear that the EC Technical Expert Group is approaching thresholds not as biophysical realities that must be abided in order to achieve sustainability in the real world, but rather as political variables open to negotiation amongst those with diverse positions of power. Therefore, it’s vital to understand that the term “thresholds” used throughout the 400+ page document is not sustainability thresholds, but rather thresholds as defined to “reflect best market practices” with the “ultimate goal of redirecting financial flows towards sustainable investments.” Of course, this raises the question of just how those investments can possibly be “sustainable” if the thresholds used to measure them are divorced from biophysical reality?

Overall, the report concludes:

The taxonomy is expected to bring benefits to financial markets participants, in particular banks and insurers, by facilitating the identification of sustainable assets and consequently the integration of sustainability factors in their investment decisions. The taxonomy is also expected to encourage the incorporation of sustainability concerns by corporations and investees into their strategy, providing an opportunity to diversify its investor base and more certainty on the transition path. The main costs derived from the implementation of the taxonomy relate to the collection and management of data needed to assess the compliance with the defined screening criteria. […] Retail consumers will benefit from the increased transparency, easier access to green products (with reduced risk of greenwashing) and better comparability. Finally, regulators and supervisors could leverage the taxonomy to implement new green investment frameworks at a lower cost. The actual impacts may vary significantly depending on several factors, the adoption of related regulatory actions (e.g. mandatory integration of ESG considerations into the investment and advisory process) and the level of appropriation of the taxonomy by the private sector, at the same time depending on its usability and dynamism.
Summing up the above and contrasting it with the needs for sustainable finance as presented in this Blueprint (chapter 2.1.), various clarifications can be made, again clarifying those to be object of the first report from June 2019.

- The taxonomy doesn’t define sustainability, just environmental mitigation and adaptation activities, so it also can’t per definition support ‘sustainable’ finance’ in the way that it’s necessary;
- There are no numbers about amounts or extent of activities necessary in order to meet minimum absolute requirements in which sectors in order to reach minimally zero negative impacts;
- The taxonomy looks at economic activities – clustered by sectors – that can support climate change adaptation and mitigation; it defines principles and ‘thresholds’ per sector activity, but again not as ‘necessary’ to adhere neither to ‘sustainable’ finance, nor to the biophysical realities. It prefers political variables open to negotiation amongst those with diverse positions of power. In our view ultimate and so far-reaching political determinations need to square themselves with thermodynamic realities.
- The taxonomy doesn’t mention ‘unsustainable’ activities (e.g. a blacklist) that could continue to receive funding and do harm to the environment. In consequence there is also no penalizing of such activities. In practical terms, the taxonomy wouldn’t build a frame for the EU to stop fossil fuel subsidies in favor of the EU taxonomy activities.
- The taxonomy is not complete (exhaustive) in its first version; there is no mechanism defined yet how to assess and complete activities exhaustively, as there’s no vision what the ultimate goal of the taxonomy vis-à-vis a generic change of the economic system design.
- As the taxonomy is based on the EU Action Plan on Financing Sustainable Growth, there is no focus on aspects like de-growth or subsistence activities as alternatives to growth; the taxonomy approach is still full baked into the existing growth-based economic system paradigm. It doesn’t reveal a vision about an alternative economy system design that could in fact be ‘sustainable
- Necessary regulation based on the outcome is envisaged, but in the light of uncomplete sets of activities unclear how and when.

The political process is open to all kind of surprises in times of urgent actions, causing quite some confusion. We have been observing this in great depth in this very particular political process, exemplified by these two resources:
- ‘BRUSSELS, Sept 25, 2019336 - Representatives of European Union governments agreed on Wednesday to delay the application of a classification of sustainable financial products to the end of 2022 and did not rule out that investments in nuclear and coal could be deemed “green”. The decision would postpone by more than two years the application of the EU green “taxonomy”, which the EU Commission had proposed to introduce from mid-2020. The text agreed by EU governments needs the approval of lawmakers in the European Parliament, who had proposed to exclude investments in nuclear energy and coal-fired plants from future lists of green investments.’
- Then, on December 17, 2019, the Presidency of the European Commission, approved a final compromise to the EU Taxonomy, inserting a new 3-tiered definition of activities under this taxonomy337: ‘(a) the economic activity contributes substantially to one or more of the environmental objectives set out in Article 5 in accordance with Articles 6 to 11a; (b) the economic activity does not significantly harm any of the environmental objectives set out in Article 5 in accordance with Article 12; (c) the economic activity is carried out in compliance with the minimum safeguards laid down in Article 13. All economic activities comply with technical screening criteria that have been specified by the Commission in accordance with Articles 6(2) 7(2), 8(2), 9(2), 10(2) and 11(2).’ This means in consequence that this three-tier added granularity waters down what a ‘green investment’ in the positive sense of the meaning entails.
• To end with a positive note, luckily, article 17 refers to potential review of the taxonomy: ‘By 31 December 2021, the Commission shall publish a report describing the provisions required for extending the scope of this Regulation to: (a) further develop the current taxonomy and expand its scope beyond environmentally sustainable economic activities in order to cover economic activities that do not have a significant impact on environmental sustainability as well as activities that do significantly harm environmental sustainability as well as review the appropriateness of specific disclosure requirements related to transitional and enabling activities; (b) cover other sustainability objectives, including social objectives. It also says ‘by [2 years after the entry into force], the Commission shall assess the effectiveness of the advisory procedures for the development of the technical screening criteria set up by this Regulation’. This gives hope that in a time from 2022 onwards the current flaws of the taxonomy can potentially be cured.

Based on the first and then second prolongation of the mandate the TEG, having taken feedback into account and observing the political process, the TEG then came up with their final report in March 2019, and remaining in an advisory capacity until September 2020.

The Final Report of the TEG, March 2020

It is particularly interesting to describe the final outcomes of the TEG in relation to the first report and the need to be judged based on the qualifiers for Sustainable Finance. This is what we focus on in the coming pages, after we described some general clarifications. Also, it has to be mentioned that the taxonomy is now a central tool in the EU’s Green New Deal and the related Sustainable Europe Investment Plan and the European Commission’s next multi-annual financial framework (MFF 2021-27), the InvestEU Programme, the single budgetary guarantee of the EU, that aims to leverage EUR 279 billion of public and private climate financing. The European Commission is considering how the Taxonomy can be applied in the climate and environmental tracking and sustainability proofing guidelines of the InvestEU Programme. The Commission will also reflect on how the Taxonomy might be used to guide the policy objectives of other parts of the public sector.
The report starts with an ‘at a glance’ summary of the outcomes of the deliberations towards finalization of the taxonomy:

**AT A GLANCE**

The EU Taxonomy is a tool to help investors, companies, issuers and project promoters navigate the transition to a low-carbon, resilient and resource-efficient economy.

The Taxonomy sets performance thresholds (referred to as ‘technical screening criteria’) for economic activities which:

- make a substantive contribution to one of six environmental objectives (Figure 1);
- do no significant harm (DNSH) to the other five, where relevant;
- meet minimum safeguards (e.g., OECD Guidelines on Multinational Enterprises and the UN Guiding Principles on Business and Human Rights).

The performance thresholds will help companies, project promoters and issuers access green financing to improve their environmental performance, as well as helping to identify which activities are already environmentally friendly. In doing so, it will help to grow low-carbon sectors and decarbonise high-carbon ones.

The EU Taxonomy is one of the most significant developments in sustainable finance and will have wide-ranging implications for investors and issuers working in the EU, and beyond.

The report also clarifies right from the start how the taxonomy is embedded into regulatory settings: ‘The Taxonomy Regulation (TR), agreed at the political level in December 2019, creates a legal basis for the EU Taxonomy. The TR sets out the framework and environmental objectives for the Taxonomy, as well as new legal obligations for financial market participants, large companies, the EU and Member States. The TR will be supplemented by delegated acts which contain detailed technical screening criteria for determining when an economic activity can be considered sustainable, and hence can be considered Taxonomy-aligned.’
The report then further explains in great detail: 'In December 2019, the co-legislators reached political agreement on the overarching Regulation. The agreed text maintains many aspects of the Commission proposal, but reconsiders parts of the scope, user obligations, timeline and technical framework. Where they are relevant to the TEG’s mandate, the TEG has considered the implications of these changes. [...] Several changes affected the scope of the Regulation and the obligations on users. [...] Key points are:

- Financial market participants offering financial products in Europe must now incorporate disclosures with reference to the Taxonomy. The disclosure requirements vary depending on product categories, which have been aligned with the definitions in the Regulation on Sustainability-Related Disclosures in the Financial Services Sector.
- Companies subject to disclosure requirements under the Non-Financial Reporting Directive (NFRD) must make disclosures with reference to the Taxonomy.
- The European Commission will develop delegated acts to further specify elements of the Taxonomy Regulation. In particular:
  - Delegated acts containing technical screening criteria will be developed in two phases: The first technical screening criteria, for activities which substantially contribute to climate change mitigation or adaptation, will be adopted by the end of 2020 and enter into application by the end of 2021. The second set of technical screening criteria, which cover economic activities substantially contributing to the other four environmental objectives, will be adopted by end 2021 and enter into application by end 2022.
  - By 1 June, 2021, the European Commission will adopt a delegated act specifying how the corporate disclosure obligations should be applied in practice. The delegated act will consider the differences between non-financial and financial companies.
  - Further development of the Taxonomy will be managed by the European Commission with input from a yet to be established Platform on Sustainable Finance. In addition, a Member State Expert Group will contribute in an advisory capacity.

The political agreement also adds specifications to the overarching technical framework for the Taxonomy. They are summarised below:

- The Regulation puts greater emphasis on ‘enabling activities.’
- For climate change mitigation specifically, the Regulation specified different routes to a substantial contribution, including a new definition of transition activities.
- The Regulation put greater emphasis on life-cycle considerations throughout the technical framework.
- Minimum safeguards for Taxonomy-aligned activities were expanded to reference the UN Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises, including the principles and rights set out in the eight fundamental conventions identified in the International Labour Organization’s declaration on Fundamental Rights and Principles at Work and the International Bill of Human Rights.
- An existing review clause which permitted the Commission to consider extending the Taxonomy to social objectives was amended to include the possibility of extending the Taxonomy to include performance criteria for activities which are significantly environmentally harmful (‘brown’ Taxonomy).
The report then differentiates between direct economic activities and enabling activities that qualify in the taxonomy. For each environmental objective, the Taxonomy Regulation (TR) recognises two distinct types of substantial contribution that can be considered Taxonomy-aligned:

1. Economic activities that make a substantial contribution based on their own performance: For example, an economic activity being performed in a way that is environmentally sustainable.
2. Enabling activities: Economic activities that, by provision of their products or services, enable a substantial contribution to be made in other activities. For example, an economic activity that manufactures a component that improves the environmental performance of another activity.

The TR explicitly recognises the role of enabling activities. The text reflects recommendations proposed by the TEG on enabling activities in our June 2019 report. As with all activities identified as Taxonomy-aligned, enabling activities meet both SC and DNSH criteria.

Regarding minimum safeguards, ‘the European Parliament and the Council established that for an economic activity to be Taxonomy-aligned, the activity should be carried out “in alignment with the OECD Guidelines for Multinational Enterprises and UN Guiding Principles on Business and Human Rights, including the International Labour Organisation’s (ILO) declaration on Fundamental Rights and Principles at Work, the eight ILO core conventions and the International Bill of Human Rights”. Where applicable, more stringent requirements in EU law still apply.’

Further chapters of the report go deeper on climate mitigation and adaptation technicalities and then also branches out on water, pollution, circular economy and biodiversity. The TEG’s mandate was only to consider these environmental objectives (pollution prevention and control, use and protection of water and marine resources, circular economy, and protection and restoration of biodiversity and ecosystems) in the context of avoiding significant harm. A full evaluation of economic activities that can substantially contribute to one or more of these objectives will be completed by the Platform on Sustainable Finance. It mainly confirms the recommendations of the earlier report and refers to later work, without specifying mandate and timelines.

The biggest addition to the final report is chapter 3 that looks at the Taxonomy In Practice, and defines 3 main groups the Taxonomy is for:

The Taxonomy Regulation sets out three groups of Taxonomy users:

1. Financial market participants offering financial products in the EU, including occupational pension providers;
2. Large companies who are already required to provide a non-financial statement under the Non-Financial Reporting Directive; and
3. The EU and Member States, when setting public measures, standards or labels for green financial products or green (corporate) bonds.

Figure 45: EU Taxonomy users – main groups
An expanded set of disclosures covering activities that substantially contribute to all six environmental objectives will be required by the end of 2022. Technical screening criteria for activities that make a substantial contribution to water, a circular economy, pollution prevention and control, and protection of ecosystems will be issued by the end of 2021.

- A subchapter for companies lays out in depth which information can be reported as Taxonomy-compliant and recommends coverage under the NFRD (see next chapter). It shows calculation methods and more insight on the three levels under consideration as well as some examples:

<table>
<thead>
<tr>
<th>COMPANY LEVEL</th>
<th>Following completion of project, company can claim 100% of turnover associated with Taxonomy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Company complies with EU regulation and respects minimum safeguards</td>
</tr>
<tr>
<td>PROJECT LEVEL</td>
<td>Project to bring Facilities B and C in line with technical screening criteria</td>
</tr>
<tr>
<td></td>
<td>Company can claim 100% of capex associated with the Taxonomy</td>
</tr>
<tr>
<td></td>
<td>May be eligible for EU Green Bond Standard</td>
</tr>
<tr>
<td>ASSET LEVEL</td>
<td>Economic activity A 15% of turnover</td>
</tr>
<tr>
<td></td>
<td>Meets emissions threshold + DNSH</td>
</tr>
<tr>
<td></td>
<td>Economic activity B 25% of turnover</td>
</tr>
<tr>
<td></td>
<td>Does not meet emissions thresholds</td>
</tr>
<tr>
<td></td>
<td>Economic activity C 60% of turnover</td>
</tr>
<tr>
<td></td>
<td>Meets emissions thresholds but does not meet DNSH</td>
</tr>
</tbody>
</table>

Figure 46: Example of company disclosures, from economic activity to company level
In addition, responsible business conduct in the context of the EU Taxonomy captures the expectations on environmental management described by DNSH technical criteria and on social performance embedded by the OECD MNEs Guidelines and the UNGPs, as the following figure shows:

Figure 47: OECD Due Diligence Guidance for Responsible Business Conduct

- A subchapter for financial market players explains further regulation and disclosure requirements: Disclosure against the Taxonomy forms part of a broader sustainability-related disclosure regime with which financial market participants are required to comply. These broader disclosure obligations are laid out in the Regulation on Sustainability-Related Disclosures in the Financial Services Sector (SDR). It lays out which products are taxonomy-relevant:

<table>
<thead>
<tr>
<th>Market segment</th>
<th>In scope for Taxonomy disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pensions and Asset Management</td>
<td>• UCITS funds:</td>
</tr>
<tr>
<td></td>
<td>• equity funds</td>
</tr>
<tr>
<td></td>
<td>• exchange-traded funds (ETFs)</td>
</tr>
<tr>
<td></td>
<td>• bond funds</td>
</tr>
<tr>
<td></td>
<td>• Alternative Investment Funds (AIFs):</td>
</tr>
<tr>
<td></td>
<td>• fund of funds</td>
</tr>
<tr>
<td></td>
<td>• real estate funds</td>
</tr>
<tr>
<td></td>
<td>• private equity or SME loan funds</td>
</tr>
<tr>
<td></td>
<td>• venture capital funds</td>
</tr>
<tr>
<td></td>
<td>• infrastructure funds</td>
</tr>
<tr>
<td></td>
<td>• Portfolio management (under Article 4(1) of MiFID II)</td>
</tr>
<tr>
<td></td>
<td>• Pensions:</td>
</tr>
<tr>
<td></td>
<td>• pension products</td>
</tr>
<tr>
<td></td>
<td>• pension schemes (defined with reference to IORP II)</td>
</tr>
<tr>
<td></td>
<td>• pan-European personal pension products</td>
</tr>
<tr>
<td>Insurance</td>
<td>• Insurance-based investment products (IBIPs)</td>
</tr>
<tr>
<td></td>
<td>• Securitisation funds</td>
</tr>
<tr>
<td>Corporate &amp; Investment Banking</td>
<td>• Venture capital and private equity funds</td>
</tr>
<tr>
<td></td>
<td>• Portfolio management</td>
</tr>
<tr>
<td></td>
<td>• Index funds</td>
</tr>
</tbody>
</table>

Table 5: Financial products with Taxonomy disclosure obligations
Also, the report delivers an explanation on the disclosure obligations based on type of sustainability claim:

<table>
<thead>
<tr>
<th>Article SDR</th>
<th>Description</th>
<th>Obligation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article 9</td>
<td>Financial products which have sustainable investment as their objective.</td>
<td>Must complete Taxonomy disclosures where the investment concerns activities that contribute to an environmental objective.</td>
</tr>
<tr>
<td>Article 8</td>
<td>Financial products which promote environmental or social characteristics of the investment, either alone or in combination with other characteristics.</td>
<td>Must complete Taxonomy disclosures where environmental characteristics are promoted.</td>
</tr>
<tr>
<td>Article 7</td>
<td>All other financial products.</td>
<td>Must complete Taxonomy disclosures or carry a disclaimer that “the investment(s) underlying this financial product do not take into account the EU criteria for environmentally sustainable investments”</td>
</tr>
</tbody>
</table>

Table 6: Disclosure obligations based on type of sustainability claim

Much additional explanation is given regarding comparing methodologies for equity and fixed-income disclosures, disclosures for green bonds and green loans, where disclosures should be made, how due diligence has to be carried out, how existing portfolios can be assessed, etc. Various calculation examples are displayed.

Furthermore, the report highlights the general process of how to apply the taxonomy, carried out in five steps: In some cases, implementation of the Taxonomy will require that financial actors (that might delegate it to their data providers or other third parties) conduct a five-step check process. An example of how this applies to investments in companies follows:

1. Identify the activities conducted by the company or issuer or those covered by the financial product (e.g., projects, use of proceeds) that could be aligned, and for which environmental objective(s).
2. For each potentially aligned activity, verify whether the company or issuer meets the relevant screening criteria – e.g., electricity generation <100 g CO2e/kWh.
3. Verify that the DNSH criteria are being met by the issuer. Investors using the Taxonomy would most likely use a due diligence-type process for reviewing the performance of underlying investees and would rely on the legal disclosures of eligibility from those investees.
4. Conduct due diligence to avoid any violation of the social minimum safeguards stipulated in the Taxonomy Regulation Article 13.
5. Calculate alignment of investments with the Taxonomy and prepare disclosures at the investment product level.
Chapter 4 of the final report by the TEG looks at further developments. We summarise them here:

- A fully realized Taxonomy should incorporate social objectives, in addition to environmental objectives, to identify substantial contributions in addition to minimum safeguards; and

- Technical screening criteria for significant levels of harm to environmental objectives need to be added. These are the so-called ‘polluting’ or ‘brown’ Taxonomy criteria. The TEG considers that a different word to ‘brown’ is needed to describe activities that are significantly harmful to environmental objectives. If Taxonomies are to be harmonised internationally, the terms used will need to appropriate to different cultural contexts.

- Regarding the use of thresholds, also internationally harmonized, the report mentions: Performance thresholds (which here are understood to be either of a quantitative or qualitative nature) are necessary for each economic activity included in the Taxonomy and for each metric. Without them, there is no way to tell if an activity is consistent with environmental objectives and if therefore ‘green’. Performance thresholds should differentiate between activities which reduce harm (for example, incremental emissions reductions) and those which are consistent with the goals of the Taxonomy. Describing activities which incrementally reduce harm as ‘green’ risks misleading markets.

- As set out in the Taxonomy Regulation, the European Commission is working to establish a Platform on Sustainable Finance to provide technical assistance and recommendations on technical screening criteria, most notably for extending the Taxonomy to environmental objectives 3–6. [...] As set out in the Taxonomy Regulation, the European Commission is working to establish a Platform on Sustainable Finance to provide technical assistance and recommendations on technical screening criteria, most notably for extending the Taxonomy to environmental objectives 3–6. [...] Technical screening criteria in the Taxonomy will require regular review to ensure consistency with the EU’s climate change and environmental objectives. The planned criteria review cycle should be transparent to the market and advised well in advance, to ensure a predictable review cycle for Taxonomy criteria.
Chapter 5 closes with tables of NACE code industries and activities that make a special contribution to climate change mitigation (for which technical screening criteria are provided) as well as tables for substantial contributions to climate change adaptation.

The final report also comes with a 600-page Technical Annex. This annex covers in all detail:

- updated technical screening criteria for 70 climate change mitigation and 68 climate change adaptation activities, including criteria for do no significant harm to other environmental objectives.
- An updated methodology section to support the recommendations on the technical screening criteria.

Again, we are looking at this from the perspective of changes to the first report and in how far our concerns from the first report got addressed.

The first changes that were made are regarding the assessment when an economic activity is considered to make a substantial contribution to climate mitigation. It is explained that ‘the update is to more clearly align with the Taxonomy Regulation which clearly identifies enabling activities, reflecting the TEG recommendation. We now refer to the two activity types as either: An activity which has a substantial contribution due to its own performance – referring to the operations within the activity, reflecting the activity boundary for the technical screening criteria; or an Activity Enabling Mitigation in another economic activity. This table also demonstrates how activities that contribute to transition (Transition Activities in the Taxonomy Regulation) are still expected to substantially contribute to climate mitigation objectives and meet Taxonomy thresholds. This was identified as the third activity type in the June 2019 TEG report.

Figure 48: Assessment of economic activities with substantial contributions to climate change
This decision tree approach was then also applied to tree to identify substantial contribution to adaptation objectives. This is consistent with the approach taken when identifying economic activities that substantially contribute to climate change mitigation in terms of "mitigated activity" and "activity enabling mitigation".

Finally, there is also a decision tree for DNSH (do not significant harm)357

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**Figure 49:** Decision tree to identify substantial contribution to adaptation objectives

**Figure 50:** Do no significant harm decision tree
The rest of the annex describes:

- Technical screening criteria: substantial contribution to climate change mitigation
- Technical screening criteria: substantial contribution to climate change adaptation
- Additional adaptation activities for future consideration

These are described for a set of industries that the EU considers to capture 93.5% of Scope 1 emissions in the EU, using 2018 data\(^{385}\). These industries are:

<table>
<thead>
<tr>
<th>NACE Macro-sector code</th>
<th>(Scope 1) Tonnes CO(_2)e (2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D - Electricity, gas, steam and air conditioning supply</td>
<td>1,021,327,916.14</td>
</tr>
<tr>
<td>C - Manufacturing</td>
<td>898,131,368.27</td>
</tr>
<tr>
<td>H - Transportation and storage</td>
<td>543,980,999.69</td>
</tr>
<tr>
<td>A - Agriculture, forestry and fishing</td>
<td>526,387,217.14</td>
</tr>
<tr>
<td>E - Water supply, sewerage, waste management and remediation activities</td>
<td>161,962,114.37</td>
</tr>
<tr>
<td>B - Mining and quarrying</td>
<td>81,201,552.02</td>
</tr>
<tr>
<td>G - Wholesale and retail trade, repair of motor vehicles and motorcycles</td>
<td>78,399,182.95</td>
</tr>
<tr>
<td>F - Construction(^1)</td>
<td>64,791,686.40</td>
</tr>
<tr>
<td>Q - Human health and social work activities</td>
<td>32,512,530.55</td>
</tr>
<tr>
<td>O - Public administration and defence; compulsory social security</td>
<td>29,297,099.74</td>
</tr>
<tr>
<td>N - Administrative and support service activities</td>
<td>21,424,859.33</td>
</tr>
<tr>
<td>I - Accommodation and food service activities</td>
<td>17,333,015.86</td>
</tr>
<tr>
<td>P - Education</td>
<td>17,273,274.20</td>
</tr>
<tr>
<td>M - Professional, scientific and technical activities</td>
<td>17,056,511.88</td>
</tr>
<tr>
<td>K - Financial and insurance activities</td>
<td>10,837,435.09</td>
</tr>
<tr>
<td>S - Other service activities</td>
<td>9,816,300.62</td>
</tr>
<tr>
<td>J - Information and communication(^1)</td>
<td>8,780,514.69</td>
</tr>
<tr>
<td>R - Arts, entertainment and recreation</td>
<td>8,269,587.66</td>
</tr>
<tr>
<td>L - Real estate activities(^1)</td>
<td>5,720,268.34</td>
</tr>
<tr>
<td>T - Activities of households as employers: undifferentiated goods- and services-producing activities of households for own use</td>
<td>234,573.70</td>
</tr>
<tr>
<td>U - Activities of extraterritorial organisations and bodies</td>
<td>26.68</td>
</tr>
</tbody>
</table>

Table 7: Sectors considered in the annex report\(^{385}\)

What follows for each of these industries are:

- an explanation why the industry was chosen;
- the economic activities that are covered in the industry;
- principles;
- metrics and thresholds;
- rationale;

described in depth over hundreds of pages. The coverage is very comprehensible and close to complete for environmental considerations.
This leads to our overall assessment about the contribution that the final report and the annex deliver towards Sustainable Finance. Also, we consider this assessment in the light of the earlier comments that we made summing up the first report:

- The taxonomy, as now explained in the TEG’s final report, doesn’t define sustainability, just environmental mitigation and adaptation activities, so it also can’t per definition support ‘Sustainable’ Finance’ in the way that it’s necessary and explained in chapter 2.1. The reports admit that the social (and economic) field isn’t covered by the Taxonomy yet, with plans to enlarge somewhere in the future.

- There are no numbers about amounts or extent of activities necessary in order to meet minimum absolute requirements (per sector) in order to reach minimally zero negative impacts. In short: when is there success as a whole in relation to thresholds & allocations for industries, subindustries and certain regions of Europe. It is assumed that every activity falling under the Taxonomy does good (mainly reducing harm, actually), but when is good also good enough to call it a success? We expect that the Green New Deal goals will further clarify these questions (relating to the fact that this context did not exist in the first report from June 2019).

- The taxonomy looks at economic activities – clustered by sectors – that can support climate change adaptation and mitigation; it defines principles and metrics & ‘thresholds’ per sector activity, but again, not as ‘necessary’ to adhere neither to ‘Sustainable’ Finance, nor to the biophysical realities. It still prefers political variables open to negotiation amongst those with diverse positions of power, while some admittedly rely on existing legislation. In our view ultimate and so far-reaching political determinations need to square themselves with ‘non-negotiable’ thermodynamic realities.

- The taxonomy doesn’t mention ‘unsustainable’ activities (e.g. a blacklist) that could continue to receive funding and do harm to the environment. In consequence there is also no penalizing of such activities. In practical terms, the taxonomy wouldn’t build a frame for the EU to stop fossil fuel subsidies in favor of the EU taxonomy activities. Luckily, the final report now talks about ‘brown’ activities to be assessed in the future, and it will rely on the Green New Deal to shut down funding for fossil-based technology. Realistically, and looking at national plans, such subsidies are still planned in until the mid 2030ies (taking Germany as an example where the ‘coal deal’ runs until 2038).

- The taxonomy is not complete (exhaustive) in its first version, while in climate terms it mentions coverage of 93.5 % of emissions in the EU. There is no mechanism defined yet how to assess and complete activities exhaustively, as there’s no vision what the ultimate goal of the taxonomy vis-à-vis a generic change of the economic system design. Again, we would expect the European Green New Deal would accelerate this need for clarification.

- As the taxonomy is based on the EU Action Plan on Financing Sustainable Growth, there is no focus on aspects like de-growth or subsistence activities as alternatives to growth; the taxonomy approach is still full baked into the existing growth-based economic system paradigm. It doesn’t reveal a vision about an alternative economy system design that could in fact be ‘sustainable.

We think the final compromise made progress, but more towards more granularity of what existed, than what the EU Green New Deal would expect to deliver. This has been a political process above all and the handwriting of political opportunism and what’s practically possible in the time the TEG and politicians was given, is clearly visible.
8.1.2.3.2. REVISION OF THE EU GUIDELINES ON NON-FINANCIAL INFORMATION AS REGARDS CLIMATE-RELATED INFORMATION

The TEG also published their recommendations on financial reporting disclosures to the Commission in January 2019. In this comprehensive report of the TEG three major developments are visible:

- Embedding TCFD in the NFRD.

![Figure 51: Linking Climate Change Impacts and the Company's Business Model](image)
- Mapping of TCFD Recommended Disclosures and NFRD Requirements

<table>
<thead>
<tr>
<th>TCFD Recommended Disclosures</th>
<th>NFRD Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance</td>
<td>Business Model</td>
</tr>
<tr>
<td>a) Board’s oversight</td>
<td></td>
</tr>
<tr>
<td>b) Management’s role</td>
<td></td>
</tr>
<tr>
<td>Strategy</td>
<td></td>
</tr>
<tr>
<td>a) Climate-related risks and opportunities</td>
<td></td>
</tr>
<tr>
<td>b) Impact of climate-related risks and opportunities</td>
<td></td>
</tr>
<tr>
<td>c) Resilience of the organization’s strategy</td>
<td></td>
</tr>
<tr>
<td>Risk Mgmt.</td>
<td></td>
</tr>
<tr>
<td>a) Processes for identifying and assessing</td>
<td></td>
</tr>
<tr>
<td>b) Processes for managing</td>
<td></td>
</tr>
<tr>
<td>c) Integration into overall risk management</td>
<td></td>
</tr>
<tr>
<td>Metrics &amp; Targets</td>
<td></td>
</tr>
<tr>
<td>a) Metrics used to assess</td>
<td></td>
</tr>
<tr>
<td>b) GHG emissions</td>
<td></td>
</tr>
<tr>
<td>c) Targets</td>
<td></td>
</tr>
</tbody>
</table>

Three NFRD Elements relate to TCFD Strategy c) on strategic resilience, taking climate-related scenarios into account:

1. Companies may refer to scenarios as part of “business model” if they inform its strategy related to environment and climate.
2. Companies may refer to scenarios as part of “outcomes” if they provide material information and inform management decisions.
3. Companies may refer to scenarios as part of “risk management” if they are considered risk management tools that reflect climate-related risks and opportunities.

Figure 52: connecting TCFD recommendations with NFRD elements

- Defining different types of disclosure based on the level of exposure of reporting companies with respect to climate-related risks and opportunities.

Three types of disclosures have been defined, from strongly expected from all reporting companies to only expected from reporting companies most exposed to climate-related risks and opportunities and/or with a higher impact on the climate.

These three types are indicated using the phrases “should / should disclose,” “should consider / should consider disclosing,” and “may consider / may consider disclosing,” as follows:

- Type 1 disclosures – those that companies should disclose (high expectation that all reporting companies disclose them)
- Type 2 disclosures – those that companies should consider disclosing (expected of companies with significant exposure to climate-related risks and opportunities)
- Type 3 disclosures – those that companies may consider disclosing (additional or innovative disclosures that provide more enhanced information)
In June 2019 the EU Commission consequently published ‘Guidelines on non-financial reporting: Supplement on reporting climate-related information (2019/C 209/01)’. In its introduction it sets the context: ‘This communication has been prepared pursuant to Article 2 of Directive 2014/95/EU of the European Parliament and of the Council (1) in order to assist companies concerned to disclose non-financial information in a relevant, useful, consistent and more comparable manner. It is a supplement to the Guidelines on Non-Financial Reporting adopted by the Commission in 2017 (C(2017) 4234 final). This communication provides non-binding guidelines, and does not create new legal obligations. [...] Companies using these guidelines may also rely on international, EU-based or national frameworks. This communication does not constitute a technical standard, and neither preparers of non-financial statements nor any party, whether acting on behalf of a preparer or otherwise, may claim that non-financial statements are in conformity with this document.’ Or in short: these are just recommendations, and the only binding requirements are the nationally adapted versions of the Directive from 2017.

The communication clearly says: ‘This supplement integrates the TCFD recommendations, and provides guidance to companies that is consistent with the Non-Financial Reporting Directive and the recommendations of the TCFD.’

However, the communication goes further than the TCFD in some instances:

- Materiality: The materiality perspective of the Non-Financial Reporting Directive covers both financial materiality and environmental and social materiality, whereas the TCFD has a financial materiality perspective only. The NFRD calls this ‘double materiality perspective’, as also showcased through the following figure:

![Diagram showing double materiality perspective of Non-Financial Reporting Directive in the context of reporting climate-related information](image-url)

**Figure 53:** The double materiality perspective of the Non-Financial Reporting Directive in the context of reporting climate-related information
This is a very welcome addition to the typical ‘outside-in risk’ mindset as cemented by COSO and most corporate risk manuals. The addition of ‘inside-out risk’ is a long asked for addition to risk management and best described in r3.0’s New Business Model Blueprint.

The communication goes on by noting ‘When assessing the materiality of climate-related information, companies should consider a longer-term time horizon than is traditionally the case for financial information. Companies are advised not to prematurely conclude that climate is not a material issue just because some climate-related risks are perceived to be long-term in nature. When assessing the materiality of climate-related information, companies should consider their whole value chain, both upstream in the supply-chain and downstream368.’

- Natural, social and human capital: The communication clarifies that there are interlinkages on various capitals due to climate change. ‘Many companies are dependent on natural capital. If the natural capital itself is threatened by climate change then the company will be exposed to climate-related risks, especially physical risks. Companies should therefore carefully consider their natural capital dependencies when identifying and reporting on their climate-related risks. For example, an agricultural production company may be dependent on various natural capitals such as water, biodiversity, and land and soil productivity, all of which are vulnerable to climate change. Such a company would be expected to explain these dependencies when reporting on its climate-related risks. Many companies are also dependent on human and social capital, such as the skills and motivation of employees, and the level of trust the company enjoys amongst external stakeholders. Companies should integrate information on human and social capital as appropriate in their reporting on climate-related issues. For example, employees may be critical to the development of innovative low-carbon products and services369.’

- Climate related opportunities: the communication doesn’t stop at risk, but also adds climate-related opportunities into the mix of voluntary disclose. ‘Climate-related risks can often be converted into opportunities by companies offering products and services that contribute to climate change mitigation or adaptation. Climate change adaptation means anticipating the adverse effects of climate change and taking appropriate action to prevent or minimize the damage they can cause. It includes business opportunities such as new technologies to use scarce water resources more efficiently, or the building of new flood defenses. Climate change mitigation refers to efforts to reduce or prevent GHG emissions. Examples of business opportunities associated with mitigation include renewable energy or the development of more energy efficient buildings and transport systems370.’ In that sense the NFRD portrays the activities as recommended by the EU Taxonomy as ‘opportunities’ for climate adaptation and mitigation.

The communication then moves to the recommended disclosures and guidance that follow the NFRD structure, namely climate-related disclosures for each of the five reporting areas listed in the Non-Financial Reporting Directive: (a) business model (b) policies and due diligence (c) outcome of policies (d) principal risks and risk management and (e) key performance indicators. All but the last point are mainly descriptions of the processes and decision-making on the materiality of climate change. The last section on Key Performance Indicators concentrates on GHG Emissions on all scopes, Energy, Physical Risks and Green Finance. A last chapter focuses on specific recommendations for banks and insurance companies, and especially Lending and Investment Activities and Insurance and Underwriting Activities. All disclosures are what r3.0 describes as ‘numerator’ disclosure in the interpretation of the Sustainability Quotient.
Summing up the above and contrasting it with the needs for sustainable finance, various clarifications can be made:

- Both the TEG report and the EU communication step forward in what the EU Taxonomy and the TCFD recommendations set out to achieve, but stay limited in climate-related activities;
- Both shy away to assess a more complete sustainability perspective and stay limited in the environmental and climate-related area, while every now and then remarks about the triple-bottom-line are made, but not further followed up;
- With regard to disclosures that could make a real assessment of the sustainability of an activity, the recommended data only allow ‘numerator-based’ results, which falls under the remit of ESG Integration;
- With regards to context-based information, the documents don’t offer thresholds beyond a general notion to adhere with the Paris Climate Accord, or more general zero GHG emissions by 2050.
- It is commendable that the communication clarifies the need for inside-out and outside-in risk assessments in order to define climate mitigation and adaptation risks and also opportunities;
- Regeneration and de-growth strategies as innovation beyond zero negative impact seem to not exist in the imagination of the TEG or the EU communication;
- Sustainable Finance or any of Activation or Transformation factors as recommended as specific action areas of this Blueprint (see chapter 4 and 5) are nowhere discussed.

In Spring of 2020 the European Commission started a two-step feedback process on the revision of the Non-Financial Reporting Directive (NFRD). In a first step they offered a general consultation on three policy options, best described as 1) leave the NFRD as it is, 2) let the Directive be more based on (a) standard(s), and 3) strengthen the directive where necessary. This was followed by a survey process that ran until June 2020. r3.0’s feedback to the step 1 consultation and in favor of option 3 has been submitted and is laid out in more depth and including graphics in a Medium article. The second step of the consultation was questionnaire-based, and r3.0 submitted its response by June 10, 2020. Based on the overall feedback it remains to be seen if the EC is ready to take steps that align the NFRD with ‘sustainability’ reporting aspects that would support ‘sustainable’ finance as discussed in this Blueprint.

8.1.3. EXAMPLES OF OTHER SUSTAINABLE FINANCE ACTIVITIES

There is a plethora of activity happening in the world best described as ‘ESG Integration’. At r3.0 we assess most of them with regard to a structural intention to truly add to sustainable finance as laid out above. The initiatives above got most attention in recent years. In addition we find it worthwhile to mention a couple more, while not claiming an exhaustive overview.

8.1.3.1. UN PRINCIPLES FOR RESPONSIBLE BANKING (UN PRB)

In summer of 2019 the Principles of Responsible Banking were launched by 130 banks from 49 countries, representing more than USD47 trillion in assets, on 22 and 23 September 2019 in New York City, during the annual United Nations General Assembly. More than 45 CEOs together with the UN Secretary-General attended the launch ceremony. For their development 30 leading banks from around the globe, jointly representing more than USD 18 trillion in assets, have come together to establish the Principles for Responsible Banking under UNEP FI. These 30 banks have been advised by a group of 12 civil society institutions, including Oxfam International, 2 Degrees Investing Initiative and WWF, in the development of the Principles for Responsible Banking.
As the website mentions: 'The Principles provide the banking industry with a single framework that em-
beds sustainability at the strategic, portfolio and transactional levels and across all business areas. The
Principles align banks with society’s goals as expressed in the Sustainable Development Goals and the
Paris Climate Agreement. Target setting in the most material areas is a key feature of the Principles. Banks
are required to set and publish targets in line with society’s goals, as expressed in the SDGs, the Paris
Climate Agreement and relevant national frameworks, in the areas where they have the most significant
positive and negative impact. The Principles require banks to be transparent and accountable. Banks are
required to report publically on their positive and negative impacts, their contribution to society’s goals
and their progress in implementing the Principles, and to engage with key stakeholders on their impacts. ’
Banks are asked to adhere to the following six principles:

<table>
<thead>
<tr>
<th>PRINCIPLE 1: ALIGNMENT</th>
<th>PRINCIPLE 2: IMPACT &amp; TARGET SETTING</th>
<th>PRINCIPLE 3: CLIENTS &amp; CUSTOMERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>We will align our business strategy to be consistent with and contribute to individuals’ needs and society’s goals, as expressed in the Sustainable Development Goals, the Paris Climate Agreement and relevant national and regional frameworks.</td>
<td>We will continuously increase our positive impacts while reducing the negative impacts caused, and managing the risks to people and environment resulting from our activities, products and services. To this end, we will set and publish targets where we can have the most significant impacts.</td>
<td>We will work responsibly with our clients and our customers to encourage sustainable practices and enable economic activities that create shared prosperity for current and future generations.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PRINCIPLE 4: STAKEHOLDERS</th>
<th>PRINCIPLE 5: GOVERNANCE &amp; CULTURE</th>
<th>PRINCIPLE 6: TRANSPARENCY &amp; ACCOUNTABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>We will proactively and responsibly consult, engage and partner with relevant stakeholders to achieve society’s goals.</td>
<td>We will implement our commitment to these Principles through effective governance and a culture of responsible banking.</td>
<td>We will periodically review our individual and collective implementation of these Principles and be transparent about and accountable for our positive and negative impacts and our contribution to society’s goals.</td>
</tr>
</tbody>
</table>

In a guidance note UN PRB asks banks to apply three key steps designed to ensure the effective imple-
mentation of the Principles, and to enable a bank to continuously improve its impact and contribution to
society, namely

- Step 1 – Impact Assessment: Analyze where the bank has significant positive and negative impacts on society, the environment and the economy. Then identify where the bank can realize the greatest positive impacts and reduce significant negative impacts.
- Step 2 – Target Setting and Implementation: Set SMART targets that address the significant impacts the bank has identified, and work towards achieving them.
- Step 3 – Accountability: In the bank’s existing reporting, describe how your bank is implementing the Principles for Responsible Banking. Provide an assured assessment of the progress that your bank is making\(^{275}\).

An additional Guidance Document\(^{276}\) deepen the tasks and to-do’s of the six principles, and an additional Assessment Template can be used to fill in progress made.
Looking at the value of the UN PRB, we are citing Adam Garfunkel, MD of Junxion, a r3.0 Advocation Partner and consultancy that was involved in the development of the Principles. He notes ‘So, they [the Principles] are not going to be easy to implement—but we all know they are necessary. The Principles represent an outstanding opportunity for the banking industry to do the right thing. To demonstrate that they are serious about backing up their social purpose statements with real impact that ‘achieves shared prosperity for both current and future generations’, as the Principles’ mission statement says. And given the crucial role that finance plays in society’s collective efforts to create a better future, there is a lot riding on how banks step up here. It’s more than securing their own legitimacy and creating the sustainable banking system of the future, it’s about financing the change we need to see in the world. Even more than that, we need these industry initiatives—these ‘meso-level’ activities in r3.0 parlance – to succeed and society has to see that they do. The real opportunity of the Principles is to convince a sceptical world that businesses can and will collaborate for the common good’.

A further assessment of the UN PRB:

- The UN PRB demands an impact assessment; it isn’t clear how that is linked to sustainability context, so at this moment and as far as we can see impacts are not contextualized;
- Furthermore, the UN PRB relates to and therefore uses a traditional materiality process approach;
- The UN PRB also doesn’t make use of the possibility of multiple capitals and their assessment.

8.1.3.2. GERMAN SUSTAINABLE FINANCE CLUSTER (GSFC)

We portray the GSFC as one of many national initiatives. In 2017/2018 a German Sustainable Finance Cluster was founded. r3.0 sees this as a great example how to align necessary players around a topic of such urgency. In its mission statement the GSFC, also supported by a Steering Board and Standing Committee, explains its reason for being: ‘Green and sustainable finance constitutes a core subject of the process of transformation to a sustainable global economic system. Neither the achievement of the “Sustainable Development Goals” nor the implementation of the “Paris Climate Protection Objectives” are possible without fundamental change, to be accomplished within the framework of the basic structure of national and international capital allocations. Against this backdrop, the major task is now to develop user-oriented concepts for the implementation of sustainable criteria in the business models of the various stakeholders operating at the financial center, so as to face the risks of upcoming challenges and stiffening competition in a proactive manner, but especially to identify and capitalize on the economic opportunities of change. In this context, the specific structure of actors in Germany, which is partly dominated by medium-sized countries, shall be taken into account. The GSFCG pursues an open policy. A network is to be established, in which expertise is bundled in relation to matters of finance and risk. The GSFCG shall serve as a central point of contact for the sustainability- and climate-relevant issues/questions of actors in the financial sector and beyond. As a result, the various green and sustainable finance initiatives existing at the financial center Germany and in Europe are to be strengthened, and any already existing impulse is to be invigorated. National initiatives such as the Hub for Sustainable Finance and others as well as European and international expert groups shall also be involved in the activities’.
Various ‘Fields of Action’ have been defined:

- ‘Sustainable Finance – Status Quo and Innovation: the Cluster is working on outlining the current green and sustainable finance activities on the German financial market within the scope of its defined area of action “Sustainable finance – status quo and innovation.” This overview is designed to allow comparison with other financial centres around the world, accounting for the individual requirements of the German economic and financial system, and to serve as a conduit for identifying further development and innovation potential380.’ A baseline report was published in August 2018.

- Data and Digitalisation: ‘The aim is to add essential information on environmental and social issues as well as on aspects of corporate governance to the traditional financial indicators of companies. Expanding the information basis by the so-called ESG data (environmental, social, governmental) affords companies holistic access to the opportunities and risks related to their own business models, while helping to establish tailor-made management systems to deal with both existing and future opportunities and risks. At the same time, such reporting provides financial sector players with more comprehensive insights into corporate strategy and enables improved forecasts of a company’s value. Within this area of action, the Cluster deals with questions relating to alternative investment strategies, the digital prerequisites for data acquisition and integration, and the fundamental starting points for sustainability and digitisation in the financial market381.’

- Metrics and Standards: ‘A central pillar of this area of action is the establishment of a core business-related risk analysis of financial institutions based on the recommendations of the Financial Stability Board’s “Task Force on Climate-related Financial Disclosure” (TSFD). There is also a focus on supporting the development of a materiality-based reporting concept and measurement methods in all three dimensions of sustainability: environmental, social and governmental. Against this backdrop, the GSFCG is also represented in the relevant European Commission’s expert group – and is thus actively involved in the current taxonomy process on green and sustainable behaviour in the financial sector382.’

- Dialogue and Knowledge Development: ‘This area of action encompasses events such as conferences, lecture series, workshops and seminars, the commissioning and support of scientific studies, as well as active support of regulatory processes and positioning on current legislative procedures. In addition, the Cluster promotes close cooperation with national players in the sustainable finance movement and interaction with other sustainable finance centers and initiatives in the international arena383. As a practical outcome of this area the GSFC has already organized two annual conferences in Frankfurt and connects to other players in the field, as well as working in cooperation with the German Council for Sustainable Development (RNE). Also, a Sustainable Finance ‘Beirat384 (Sustainable Finance Committee of the German Federal Government) under the auspices of the German Environmental Ministry and the German Finance Ministry was installed, supporting the Green Cabinet of the German Government. The Committee has released an interim report in spring of 2020 and started a consultation on 53 topics to be initiated in the triangulation of political action, corporate action and financial market action385.’
While the way how the GSFC and the Sustainable Finance Committee of the German Federal Government are organized, governed and their activities are clearly structured and intentions well laid-out, it clearly needs to be seen as one of many actors that undermine the term ‘Sustainable Finance’ in areas

- that remain stuck in the reduced understanding of ESG Integration as a substitute for sustainability and thereby – like the EU approaches, the TCFD and the NFDR – remain insufficient in ‘numerator management’ of ESG topics.
- Attempts by r3.0 in trying to ‘open up’ to what’s necessary and to enlarge the scope to true ‘sustainable’ finance remained unheard, which showcases a lack of the GSFC to actually question our overall economic system set-up. This is – as shown in earlier chapters - a recipe for failure in the long run. It is to be hoped that this Blueprint will allow for a renewed willingness to discuss, especially with the recommendations of chapter 4 in mind.
- We refrain to repeat other shortcomings, as they overlap with what was already said for the EU Taxonomy, TCFD and the NFDR.

8.1.3.3. CENTRAL BANKS/SUPERVISORS NETWORK FOR GREENING THE FINANCIAL SYSTEM (NGFS)

In the TCFD Second Status Report Michael Bloomberg specifically mentioned the NGFS: ‘I applaud the recent acknowledgement from the Network for Greening the Financial System (NGFS), a group of 36 central banks and supervisors, that “climate-related risks are a source of financial risk [and it] falls squarely within the mandates of central banks and supervisors to ensure the financial system is resilient to these risks.” As one of their six key recommendations to foster a resilient financial system, the NGFS highlighted the importance of disclosure and encouraged companies to disclose in line with the TCFD recommendations.

The Origin of the Network for Greening the Financial System goes back to the Paris "One Planet Summit" in December 2017, where eight central banks and supervisors established the Network of Central Banks and Supervisors for Greening the Financial System (NGFS). Since then, the membership of the Network has grown dramatically, across the five continents, to 49 members and 9 observing organisations. The Network’s purpose is to help strengthening the global response required to meet the goals of the Paris agreement and to enhance the role of the financial system to manage risks and to mobilize capital for green and low-carbon investments in the broader context of environmentally sustainable development. To this end, the Network defines and promotes best practices to be implemented within and outside of the Membership of the NGFS and conducts or commissions analytical work on green finance.

In its initial call to action the NGFS called for

7. Integrating climate-related risks into financial stability monitoring and micro-supervision
8. Integrating sustainability factors into own-portfolio management
9. Bridging the data gaps
10. Building awareness and intellectual capacity and encouraging technical assistance and knowledge sharing
11. Achieving robust and internationally consistent climate and environment-related disclosure
12. Supporting the development of a taxonomy of economic activities.
The Executive Summary of the Call to Action introduces the magnitude of the urgency for Central Banks in very clear wording: ‘Climate change is one of many sources of structural change affecting the financial system. However, it has distinctive characteristics that mean it needs to be considered and managed differently. These include:

- Far-reaching impact in breadth and magnitude: climate change will affect all agents in the economy (households, businesses, governments), across all sectors and geographies. The risks will likely be correlated with and potentially aggravated by tipping points, in a non-linear fashion. This means the impacts could be much larger, and more widespread and diverse than those of other structural changes.
- Foreseeable nature: while the exact outcomes, time horizon and future pathway are uncertain, there is a high degree of certainty that some combination of physical and transition risks will materialize in the future.
- Irreversibility: the impact of climate change is determined by the concentration of greenhouse gas (GHG) emissions in the atmosphere and there is currently no mature technology to reverse the process. Above a certain threshold, scientists have shown with a high degree of confidence that climate change will have irreversible consequences on our planet, though uncertainty remains about the exact severity and time horizon.
- Dependency on short-term actions: the magnitude and nature of the future impacts will be determined by actions taken today, which thus need to follow a credible and forward-looking policy path. This includes actions by governments, central banks and supervisors, financial market participants, firms and households.

While today’s macroeconomic models may not be able to accurately predict the economic and financial impact of climate change, climate science leaves little doubt: action to mitigate and adapt to climate change is needed now. The NGFS recognizes that there is a strong risk that climate-related financial risks are not fully reflected in asset valuations. There is a need for collective leadership and globally coordinated action and, therefore, the role of international organisations and platforms is critical.

While the challenge couldn’t be set clearer in its magnitude and need for necessary action (using ‘transition’ at various stages within the report), the 6 recommendations unfortunately (or fatally) fall short of supplying the necessary actions. Falling back to ESG, scenarios, a taxonomy, etc. reveals the limited willingness to full grasp and assess the needed economic system change in which true sustainable finance needs to serve the purpose.

8.2. ACKNOWLEDGEMENTS

8.2.1. WORKING GROUP MEMBERS

- Keith Ambachtsheer, Founder, KPA Advisory Services
- Trae Ashlie-Garen, Executive Coach, Animis Philanthropic Ventures Inc. and the WINfinity Framework
- Chauncey Bell, Chairman and Chief of Design, Harvester Academy
- Salomon Billeter, Founder, sim2sustain
- Joe Brewer, Director, Center for Applied Cultural Evolution
- Jane Fiona Cumming, Co-Founder & Director, Article 13
- Jed Davis, Director of Sustainability, Cabot Creamery Cooperative
- Frank Dixon, Founder, Global System Change
- Catharina B. Dyvik, Program Manager, Blended Finance Taskforce / SYSTEMIQ
- Gil Friend, CEO, Natural Logic Founder Critical Path Capital
- John Fullerton, Founder, Capital Institute
- Adam Garfunkel, Managing Director, Junxion
- Radoslav Georgiev, ESG Disclosure Lead, ING
8.2.2. SPONSORS

This Blueprint, like any of r3.0’s Blueprints, could not have been developed without the help of our sponsors. The Sustainable Finance Blueprint was financially supported by GLS Bank from Germany, the Province of Northern Brabant in the Netherlands, and ESG Portfolio Management. Normally r3.0’s Blueprint projects are funded by a bigger group of supporters, but due to COVID-19 many potential funds were set on hold, so this project was particularly challenging to pursue. We are therefore immensely thankful to all working group members who stuck with us for the great result r3.0 is now able to gift to the world as another global public good. r3.0 also specially thanks our partner agency heureka for supporting the graphic and realisation process of this Blueprint.

8.2.3. ABOUT R3.0

r3.0 promotes Redesign for Resilience and Regeneration. As a global common good not-for-profit platform, r3.0. crowdsources open recommendations for necessary transformations across diverse fields and sectors, in response to the ecological and social collapses humanity is experiencing, in order to achieve a thriving, regenerative and distributive economy and society.

https://www.r3-0.org/
8.2.4. ABOUT THE LEAD AUTHORS

Bill Baue, Senior Director, r3.0

As an internationally recognized expert on Sustainability Thresholds, Thriveability, and Online Stakeholder Engagement, Bill Baue catalyzes systemic transformation. As a serial entrepreneur, he has co-founded several social enterprises: r3.0, Sustainability Context Group, ThriveAbility Foundation, Sea Change Radio, and Curmnt.

Baue currently serves as Senior Director of r3.0 (Redesign for Resilience & Regeneration), a not-for-profit common good that networks a global community of Positive Mavericks focused on transcending incrementalism to trigger necessary transformations that enact living systems principles. In this role, he serves as the Systems Convener for the Connecticut River Valley Bioregional Collaborative of the Capital Institute’s Regenerative Communities Network. He also serves as the Convener of the Measurement Scorecards workstream of the Transformations Systems Working Group.

Baue has worked with prominent organizations across the sustainability ecosystem, including Audubon, Cabot Creamery Coop, Ceres, GE, Harvard, International Integrated Reporting Council, several United Nations agencies (UNCTAD, UNEP, UNGC, UNRISD), Walmart, and Worldwatch Institute. He serves on the Board of Co-op Power, the Technical Advisory Group of the Science Based Targets initiative, and as Senior Advisor to Preventable Surprises.

He lives near the Connecticut River Valley bioregion, where his daughters Clara, Emma, and Aoife periodically visit. He is a diehard Deadhead who enjoys camping, hiking, kayaking, yoga, meditation, and dancing contact improvisation.

Ralph Thurm, Managing Director, r3.0

Ralph Thurm is one of the leading international experts for sustainable innovation and strategy as well as sustainability and integrated reporting. He is co-founder and Managing Director, content curator and facilitator of the r3.0 Platform, worked as Director of Engagement for GISR and co-founder of the ThriveAbility Foundation. Earlier, Ralph Thurm held positions as Head of the Sustainability Strategy Council at Siemens, COO of the Global Reporting Initiative and Director of Sustainability & Innovation at Deloitte. Ralph was involved in the development of all four generations of the GRI Guidelines. Furthermore, Ralph works in and supports many networks for sustainable innovation as a valued partner and is a member of various Boards and Juries. His blog A|HEAD|ahead is a respected source and input for many international discussions.

Ralph is a hardrocker, plays guitar and loves a lot of distortion. Sustainability and rock’n’roll both ask for revolution, being rebellious is in Ralph’s genes. Connecting sustainability and economy, having studied micro and macro-economics in the late 80’s of the last century, needed an activist and rebel approach to swim against the mainstream ignorance of the concept of sustainability. In all his business life Ralph looked for the big wide openness of new and innovative approaches to sustainability.


4 “Second-Order Intermediaries” is a term developed by Trae Ashlie-Garen in the context of the WINfinity Framework as applied under the umbrella of Animis Philanthropic Ventures Inc. These intermediaries are defined as Facilitators from a range of thought-framework disciplines, who are currently practicing Deep Listening and Transformative Principles with individuals and groups (ideally as separate as possible from corporate, founder, or funder agenda) through their work. Topic agnostic, these cross-industry equitable conversation champions conduct their work sufficiently upstream of / in advance of / before, the “when”, “where” and “with whom” considerations of typical convening efforts. Their primary purpose is to encourage convening as an actual learnable and repeatable capacity for members across communities to drill down on relevant pathways that lead to mutually agreed upon critical paths for systems change.


8 Ibid, 15.


13 David Spratt & Ian Dunlop, What Lies Beneath: The Understatement of Existential Climate Risk, Breakthrough — National Centre for Climate Restoration, Melbourne, Australia, August 2018. https://docs.wixstatic.com/ugd/148bc0_a0d7c18a1b64e6489a9c8c8f18a42889.pdf


30 Fullerton, op cit. p12.

31 Turner, quoted in Fullerton, op cit.


33 Michael Hudson, “A debt jubilee is the only way to avoid a depression,” Washington Post, Opinions, 21 March 2020. https://www.washingtonpost.com/opinions/2020/03/21/debt-jubilee-is-only-way-avoid-depression/

34 Ibid.


38 See https://www.p-plus.nl/nl/nieuws/The-Worlds-Bookkeeper-AVANS


41 Ibid.

42 Ibid.


46 Quilligan, 2019, op cit.


49 Ibid.

50 Ibid.

51 Ibid.
Ibid.


Ibid.


Ibid.


Fullerton, Act III, 2019, op cit.

Ibid.

Ibid.


In her book Doughnut Economics, Raworth describes the “Power of Pictures” in re-conceptualizing systems: “If we want to rewrite economics, we need to redraw its pictures because we stand little chance of telling a new story if we stick to the old illustrations.” Raworth cites cognitive linguist George Lakoff on framing, noting that “simply rebutting the dominant frame will, ironically, only serve to reinforce it [so] it is absolutely essential to have a compelling alternative frame...” Kate Raworth, Doughnut Economics: 7 Ways to Think Like a 21st Century Economist, Chelsea Green, 2017. pp. 11, 20.


In response to a critique of the Planetary Boundaries research as it pertains to biodiversity, the Planetary Boundaries researchers clarified that the framework does not propose “tippping point” thresholds for all ecological systems, but rather only for those where such thresholds exist. In other instances, they appeal to systems dynamics. Johan Rockström, Katherine Richardson, Will Steffen, “A fundamental misrepresentation of the Planetary Boundaries framework,” Stockholm Resilience Centre, 20 November 2017. https://www.stockholmemresilience.org/research/research-news/2017-11-20-a-fundamental-misrepresentation-of-the-planetary-boundaries-framework.html


Ibid.

Baue, 2019, op cit.


See https://unepinquiry.org/about-us/

See https://www.youtube.com/watch?time_continue=2&v=V5c-eqNxeSQ


See https://medium.com/@r3dot0/the-shift-to-stakeholder-capitalism-is-it-transformative-or-simply-incremental-improvement-990b141dd29


r3.0 is developing the Value Cycles Blueprint concurrently while developing this Sustainable Finance Blueprint, which may result in updating this Principle to “Cyclicality”

See https://en.wikipedia.org/wiki/Elinor_Ostrom


See https://en.wikipedia.org/wiki/Elinor_Ostrom

In addition to Ostrom’s and Murnaghan’s work participants also pondered about the work of Charles Eisenstein and Daniel Schmachtenberg about ‘Emergence’ adds to the process enablers part of this Blueprint’s logic. We recommend their work for additional depth, a lot of it can be found online.


Op cit, Baue 2013.

Op cit, Fullerton 2019 Act III.


In its 2018 Global Sustainable Investment Review, the Global Sustainable Investment Alliance (GSIA) notes that “norms-based screening” (one of seven “activities and strategies” covered in its definition of “sustainable investing”) “is the only strategy to have declined since 2016—a decrease of 24 percent—to $4.7 trillion in assets.” In other words, sustainable investing is moving away from, not toward, sustainability (as defined by norms & thresholds). And GSIA applies the term “norms” loosely, applying both to strict sustainability norms and thresholds, as well as encompassing broader “norms” that are not strictly tied to sustainability, such as the UN Global Compact Principles. Global Sustainable Investment Alliance (GSIA), 2018 Global Sustainable Investment Review, 2019. http://www.gsi-alliance.org/trends-report-2018/

Op cit., Fullerton 2019 Act III.

Ibid.


131 Alberto Carillo Pineda, email to authors, 6 November 2019.

132 Intergovernmental Panel on Climate Change (IPCC), Global Warming of 1.5°C, October 2018. https://www.ipcc.ch/sr15/


141 Mark McElroy, Making Materiality Determinations – A Context-Based Approach, UNRISD, Forthcoming.


143 Op Cit., Catton 1980.


148 Lest the obvious escape notice, please note that the term “evaluate” embeds the term “value.”


151 In Draft Two, we will also look at how the work of the Impact Management Project exemplifies current best practice that goes further than Impact Valuation, but still falls short of what we would
I13 Ibid. Note that the “Octopus” actually has not 8 but 12 “legs” (or tentacles) corresponding to both inputs and outputs of the 6 capitals.
I15 Ibid.
I18 Insert citations for weak sustainability & strong sustainability
I23 Ibid.
I24 Ibid.
I26 Bill Baue, Data Blueprint, r3.0, 2018.
I27 Cornell Legal Information Institute, Fiduciary Duty, https://www.law.cornell.edu/wex/fiduciary_duty
I34 McNeil & Johnson, op cit.
Jon Lukomnik, email to author, 5 March 2020.


Ibid.


Lukomnic, op cit.

Ibid.


Preventable Surprises has more recently come out in favor of Real Zero (which requires "achieving zero emissions effectively without the help of compensation or negative emissions") over Net Zero. Jérôme Tagger, "Making Net Zero count by facing up to its shortcomings," Preventable Surprises, 6 March 2020. https://preventablesurprises.com/publications/blog/making-net-zero-count-by-facing-up-to-its-shortcomings/

Ibid.


Ibid.


Shell, 40 Years of Shell Scenarios, 2012. https://www.shell.com/promos/forty-years-of-shell-scenarios/_jcr_content.stream/1448557479375/a0e75f042fee5322b72780ee36e5ba17c35a4f6c/shell-scenarios-40yearsbook082013.pdf

Ibid.


214 Ibid.


226 EU


228 Not to be confused with the Breakthrough Institute, co-founded by Ted Nordhaus, which advances an Eco-Modernist perspective that aligns with his uncle William Nordhaus’s perspective (as discussed in the “Growth” section of this Blueprint.


232 Thanks to Working Group member Will Szal of Regen Network for suggesting the addition of transformative finance to this Blueprint.


transformational-engagement-principle

238 Ibid.


240 Ibid.


243 As we saw in Box X on Science Based Targets and Threshold Investing, there is actually no scientific evidence of systems-level decarbonization as a result of portfolio-level decarbonization, which is the function that fossil fuel divestment performs. But we believe that the general points on STEs and STIs made by Otto et al still stands.


245 Transformative Engagement Principle, Blue Marble Evaluation. https://bluemarbleeval.org/principles/transformative-engagement-principle; This language aligns closely with r3.0’s notion of the “pace, scale, and scope” of necessary transformations.

246 Transformation Fidelity Principle, Blue Marble Evaluation. https://bluemarbleeval.org/principles/operating-principles/transformation-fidelity-principle; This formulation echoes the 2 epigraphs to this chapter: ”It is often not clear what should be transformed, by and for whom, and through what processes” and ”we continue to talk about transformation without meaning transformation.”


251 Ibid.

252 Ibid.


255 Ibid.

256 Ibid.


258 John Fullerton, “Shifting From Parts to Patterns,” Future of Finance Blog, Capital Institute, 4 April 2017. https://capitalinstitute.org/blog/shifting-from-parts-to-patterns/ Subsequent quoted material from this source as well.


260 Ibid.


264 Ibid.


266 Ibid. Emphasis in original


268 Ibid. Emphasis in original


270 Ibid.

271 Ibid.

272 One respondent in the Public Comment Period noted that this section “calls into question the very existence of institutional investing as we know it. Are people willing to give that up? How?” While answering these questions falls outside the scope of this Blueprint, we believe it’s important to include these questions here.


275 Capital Institute, 8 Principles of a Regenerative Economy. https://capitalinstitute.org/8-principles-regenerative-economy/


279 Ibid.


282 Ibid.

283 Op cit, Hickel.

284 Ibid. Emphasis added.

285 Ibid. Henshaw.

286 Ibid.

287 Ibid.

288 Ibid.


290 Op cit, Catton.


292 Ibid.
293 Ibid.
300 r3.0 Managing Director Ralph Thurm was a member of the ‘GRI Financial Markets Working Group’ during his tenure at GRI, and has witnessed those developments first hand.
301 GRI Sector Disclosure Financial Services, see: https://www.globalreporting.org/Documents/ResourceArchives/GRI-G4-Financial-Services-Sector-Disclosures.pdf
302 GISR ceased to exist in 2017 after 3 years of work. Its main focus was to develop principles for sustainability ratings and rankings and to deliver an overview of all existing ESG benchmarking products; this database merged into the WBCSD. The website (formerly www.ratesustainability.org) has been taken off the internet in the meanwhile.
303 See https://unepinquiry.org/about-us/
305 Making Waves, p 10.
306 Making Waves, p 14
307 Making Waves, p 27
308 UNEP Inquiry, Sustainable Finance Progress Report, March 2019, pages 7 and 8
309 UNEP Inquiry 'Sustainable Finance Progress Report', March 2019, page 8
310 UNEP Inquiry 'Sustainable Finance Progress Report', March 2019, page 6 and page 13-18
311 UNEP Inquiry 'Sustainable Finance Progress Report', March 2019, page 19
312 Making Waves, p. xx
313 Making Waves, p. 29
314 See https://www.youtube.com/watch?time_continue=2&v=V5c-eqNxeSQ
315 See https://www.fsb-tcfd.org/publications/final-recommendations-report/
316 Ibid.
319 See https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097&from=EN
321 See https://www.fsb-tcfd.org/wp-content/uploads/2019/06/03-0.org/blueprint-1-reporting/
323 See https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097&from=EN, Annex III for an overview of these actions.
324 See https://www.fsb-tcfd.org
See https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019XC0620(01)&from=EN

See https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019XC0620(01)&from=EN, page 2

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