Global Thresholds & Allocations Council

Feasibility Study (Part One):
Theory of Change
(and the Foundations for a Theory of Transformation)

Spring 2020

“If we are to create 21st century economies and businesses that can meet the needs of all within the means of the planet, then the Global Thresholds & Allocations Council is just the kind of initiative that can start making it happen.”

Kate Raworth, Author, Doughnut Economics

“Sustainability requires contextualization within thresholds; that’s what sustainability is all about. Yet to this day, such contextualization rarely appears in sustainability assessments. The Global Thresholds & Allocations Council seeks to close this gap by validating and, where necessary, developing thresholds and allocation methodologies. By doing so, it will enable entities to apply thresholds and allocations in concert with an independent, trusted, and authoritative expert source.”

Allen White, Co-Founder, Global Reporting Initiative

Lead: Bill Baue
Senior Director
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Executive Summary

The need for a Global Thresholds & Allocations Council (GTAC) – an advisory governance body to provide guidance for defining social and ecological limits, and methods for allocating fair-share responsibilities for respecting them – could not be clearer. This need can be summarized in two facts:

- First, humanity is transgressing four of nine global ecological thresholds, and all twelve social foundations identified by prominent physical and social scientists, a situation that courts the existential risk of collapsing ecological and social systems;
- Second, no global governance body or network currently exists to provide such guidance and coherence on approaches for companies, investors, governments, bioregions, and others to navigate back within these thresholds – despite the fact that such an outcome is necessary.

r3.0 (Redesign for Resilience & Regeneration), which is incubating GTAC, produced this Theory of Change with the support of a Netherlands-based sponsor in late 2019 and early 2020. The project included interviewing 25 global experts with experience launching major initiatives related to sustainability thresholds and regional experts with interest in governing thresholds and allocations. Quotes from these interviews are interspersed throughout this document to support its key points.

To provide necessary background context for the GTAC Theory of Change, this document starts with an Introduction that establishes the need for a Global Thresholds & Allocations Council. It also presents the Vision of GTAC (“a world where humanity lives within ecological and social thresholds of regenerative living systems”) and its threefold Mission:

- vet, validate, and stimulate threshold determinations and allocation approaches for fairly sharing resources (and responsibilities for respecting thresholds);
- facilitate widespread usage by supporting development of off-the-shelf methodologies for applying thresholds & allocations; and
- promote trust by adjudicating disputes over threshold determinations and allocation methodologies and claims.

The GTAC Theory of Change provides the standard elements of all Theories of Change: Ultimate Outcome; Preconditions / Interim Outcomes; Assumptions; Interventions; Indicators; Target Populations; Baselines; Thresholds; Timeline; Plausibility; Feasibility; and Testability.

But perhaps more interestingly, we provide a critique of theories of change, and set the foundations for expanding the Theory of Change into a Theory of Transformation, which addresses systemic predicaments through multi-dimensional, multi-faceted, and multilevel interventions that weave together multiple theories of change.

This document, focused on the Theory of Change, comprises the first part of a two-part Feasibility Study, with the second part addressing GTAC finance, governance, and operations. The ultimate goal of this document (and its companion) is to gather a community of interested partners to support the launch and development of the Global Thresholds & Allocations Council. We at r3.0 strongly believe in the value of pre-competitive collaboration to address challenges that are ultimately collective in nature.

We invite you to consider becoming just such a partner.
Introduction:
Establishing the Need for a Global Thresholds & Allocations Council

To see why we need a **Global Thresholds & Allocations Council**, just contemplate the dotted line above.

This graphic meme went viral in March 2020 to support the #FlattenTheCurve movement for slowing the spread of Covid-19. The dotted line indicates the **threshold** of “healthcare system capacity”: the finite number of beds, ventilators, masks, doctors, nurses, etc. to handle exponential surges of Covid cases.

Hospitals apply these limited resources to sick patients. **Under the line**, with flatter curves, healthcare systems can **allocate** resources to *all* patients. **Above the line**, with steeper curves, hospitals must start allocating scarce resources selectively, introducing ethically messy life-or-death decisions. Stated simply, **over the line is overload**: think what happens when boats get overloaded...

Just as hospitals and boats and other social systems have such **carrying capacities**, so too do ecological systems – such as the earth’s climate. Climate scientists have identified a 1.5°C threshold for global warming, beyond which we risk triggering tipping points that phase-shift into “hothouse earth” scenarios. So, too, with the nitrogen and phosphorous cycles, and biodiversity, and the other Planetary Boundaries; ultimately, *all* living systems (social and ecological) have carrying capacity thresholds separating functional health from dysfunctional breakdown.

Yet our world lacks governance systems for wisely managing social and ecological systems within their limits. Enter the Global Thresholds & Allocations Council (GTAC), a governance body for vetting threshold determinations and allocation methodologies, to provide overarching guidance and adjudication.

“Existing global governance on thresholds and allocations is not sufficient. That’s a no brainer. We are part of an interconnected and fragile world, and the first generation living in the socioecological space of a planetary scope. It is our responsibility to deepen and strengthen cooperation on all levels, including global, and improve governance accordingly.”

Janez Potočnik
Co-Chair, UNEP International Resource Panel
Former EU Commissioner for the Environment
Partner, SYSTEMIQ
We now live in a unique historical moment, pregnant with risk, responsibility, and – ultimately – opportunity. For the past ten thousand years, we have lived in a “Goldilocks” zone of natural balance and stability (*not too hot, not too cold*) that enabled the birth and flourishing of human civilizations.

In fact, it is *precisely* our thriving that now threatens our very existence. Over a single lifetime (the past 70 years), humanity has swelled, in numbers and in exuberance of resource use, to become a literal *force of nature*: our collective impact is now pushing Earth outside this safe “Goldilocks” zone, into danger zones that threaten human civilization with *existential* risk.

Of course, the flip side of risk is opportunity: if we have the collective power to *inadvertently* steer ourselves *outside* this safe zone, then we must have the collective power to *consciously* navigate back *within* that zone as well. All that’s needed is a clear understanding of how to live within our means, so we can ensure the means to live.

Over the last decade or so, human understanding has blossomed around how to define these constraints. First, physical scientists identified a set of Planetary Boundaries (or “ecological ceilings”) as outer limits of
impact, beyond which earth systems cross irreversible tipping points into dangerous new states. Then, social scientists added a set of “social foundations” as inner limits, under which human systems falter toward collapse. Between these outer and inner rings is the “safe and just operating space for humanity.”

**Figure 4:** The “Doughnut” circumscribing the “safe and just operating space for humanity”

Unfortunately, the research finds that humanity is *overshooting* four of the nine ecological ceilings, and *shortfalling* on all twelve of the social foundations. So, humanity stands at a cross-roads: we can either remain outside these thresholds, continuing to exacerbate existential risks; or, we can steer back within these thresholds, to retain a chance of sustaining vital life support systems for ourselves (the other living species human life depends on) and future generations of our children, grandchildren, and beyond. If we choose the latter, we need a means of self-governance to navigate back into the sweet spot between these extremes. That’s precisely why we need a Global Thresholds & Allocations Council.

Around the world, multiple initiatives are emerging to identify ecological and social thresholds, and create ways to share resources fairly, but there’s no overarching coordination among these programs. United Nations agencies have identified the need for a global governance body to address thresholds and allocations.

> “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.”

United Nations Environment Programme
*Raising the Bar: Advancing Disclosure in Sustainability Reporting*
October 2015
GTAC answers this call. GTAC will validate these ecological & social threshold determinations and spur the development of methods for translating them into fair shares for enterprises, investors, regions, and others, with the ultimate goal of steering us back into the “safe and just operating space for humanity.”

What precise shape GTAC will take remains to be seen, determined predominantly by how its proponents nurture its emergence and development. The precedent of the United Nations Guiding Principles for Business and Human Rights provides instructive guidance on this front: the outcome was not predetermined, but rather evolved as the initiative matured.

“There was no mandate to develop a document called ‘The UN Guiding Principles on Business and Human Rights.’ The original mandate was simply to ask: what are the responsibilities of business? What are the duties of states? How relevant is the idea of a sphere of influence? And so forth. The approach that we took was to build up an evidence base that made previously contested points much clearer and helped point a way forward that made sense to all. And gradually that led us to the UN Guiding Principles. I think that was a lot of the trick to the evolution. It wasn’t that we knew where we were going in terms of an ultimate outcome. We knew what questions needed to be asked. I mean, you have to build the evidence base that brings people along.”

Caroline Rees, CEO, Shift
Lead Advisor, UN Special Representative on Business & Human Rights

So, what’s most needed now is broad institutional support for the GTAC, from governments, investors, companies, foundations, academia, NGOs, multilaterals, and others, in order to realize this vision for creating a regenerative and distributive economy and society. Without such a body as the GTAC, it is hard to envision humanity maneuvering back into the safe and just operating space between the ecological and social thresholds. But with a GTAC, humanity has a chance to direct earth’s self-regulation back into the conditions in which human societies have thrived sustainably.

That is why we consider this moment to be one of the greatest opportunities in human history.

**GTAC Vision**

A world where humanity lives within ecological and social thresholds of regenerative living systems.

**GTAC Mission**

The Global Thresholds & Allocations Council, through diverse representation, will:

- vet, validate, and stimulate threshold determinations and allocation approaches for fairly sharing resources (and responsibilities for respecting thresholds);
- facilitate widespread usage by supporting development of off-the-shelf methodologies for applying thresholds & allocations; and
- promote trust and mutual learning through adjudication of differences over threshold determinations and allocation methodologies and claims.
Theory of Change

The Global Thresholds & Allocations Council (GTAC) Theory of Change (ToC) follows a template established by The Aspen Institute\textsuperscript{15} (which helped pioneer the ToC practice) with the following elements:

- **Ultimate Outcome**
- **Preconditions** for necessary and sufficient **Interim Outcomes**
- **Assumptions** based on empirical evidence and stakeholder perspectives
- **Interventions** to activate Interim Outcomes
- **Indicators** to measure progress
- **Target Populations** for effecting change
- **Baselines** from which to measure success
- **Thresholds** of levels of change that constitute success
- **Timeline** for achieving threshold of change
- **Plausibility, Feasibility, and Testability**

Finally, we address some critiques of the Theory of Change practice, and introduce the emerging notion of a **Theory of Transformation** (ToT), which we intend to develop with the conceiver of the notion, Michael Quinn Patton.

**Ultimate Outcome / Preconditions (Interim Outcomes)**

Identifying the Ultimate Outcome (or the Long-Term Goal) of a Theory of Change requires backcasting, a process first proposed by John Bridger Robinson in 1982 for application with energy policy. “Backcasting represents a form of explicitly normative scenario analysis,” Robinson wrote, which aligns perfectly with the Global Thresholds & Allocations Council, as the achievement of sustainability by operating within the thresholds of resource carrying capacities is an inherently normative process.\textsuperscript{16}

Backcasting from the Ultimate Outcome (or Long-Term Goal) through the necessary and desired outcomes (or preconditions for the ultimate outcome) of the GTAC entails the following reverse progression:

- **Ultimate Outcome (Long-Term Goal): Regenerative and Distributive Economies and Societies**
  - The ultimate outcome (or long-term goal) of the GTAC is transformation to societies with economies that regenerate vital resources sustainably, and distribute these resources in fair, just, and proportionate ways, from bioregional to global levels.

- **Penultimate Outcomes / Preconditions: Respect Thresholds via Fair, Just, and Proportionate Allocations**
  - The pivotal outcome of the work of the GTAC (and of its ToC) is the achievement of across-the-board respect for all ecological, social, and economic thresholds, such that humanity returns to operating within the carrying capacities of the earth and its resources. Given that this is a distributed responsibility, it is key to identify fair, just, and proportionate allocations of resources, such that all individuals and groups have access to sufficient resources while also bearing commensurate burdens for maintaining resource health (that supports the wellbeing of all).
Intermediate Outcomes / Preconditions: Demonstrable Progress Toward Meeting Thresholds
- The interim success of the GTAC will be demonstration of progress by sub-system entities (enterprises, investors, bioregions, etc...) toward operating within ecological, social, and economic thresholds in ways that roll up to result in broader, systemic respect for thresholds, and that they are allocating fair, just, and proportionate access to resources and burdens for respecting resource health.

Early Outcomes / Preconditions: Preliminary Action on Applying Thresholds & Allocations
- We are arguably in the early stages of this outcome, as companies in particular are starting to apply thresholds & allocations, for example via the Science Based Targets initiative on greenhouse gas emissions reductions in line with the Intergovernmental Panel on Climate Change 1.5C target. This early adoption has involved significant opportunity for learning and improvement that GTAC is instrumental in instigating and supporting. As well, application of thresholds & allocations will need to migrate across all ecological impact areas (as is developing via the Science Based Targets Network and Earth Commission under the Global Commons Alliance) as well as all social and economic impact areas.

First Outcomes / Preconditions: Awareness of the Necessity of Applying Thresholds & Allocations
- Managing collective impact in ways that respect the thresholds of the carrying capacities of resources that are vital for wellbeing first requires awareness of this necessity, so the first key outcome of the GTAC will be broad awareness of this need, particularly amongst key, high-impact and high-leverage players, such as influential governments, investors, enterprises, NGOs, etc...
- When considering where to place thresholds and allocations on Limits to Growth Co-Author Donella Meadows’ famous list of “leverage points,” first inclinations might be to peg it at number 12 on the bottom of the list: “constants, parameters, numbers.” However, we believe that awareness and understanding of thresholds and allocations requires a shift in “mindset” at the individual level and in “paradigm” at the systemic level, which places GTAC near the top of the leverage points list.

Assumptions

Thresholds Exist
- One of the fundamental assumptions underpinning this Theory of Change is the fact that thresholds do, indeed, exist in the ecological and social spheres. This is not an insignificant assumption, as it has certainly been called into question. However, this is by far a minority view, with far more support in the scientific community (and far beyond) for the Planetary Boundaries research stream. The notion of carrying capacity was well established in the field of ecology and the dynamics of overshooting carrying capacities have been analyzed in depth, with research on tipping points continuing to evolve.
- The existence of social thresholds also dates back almost a half-century, to when Barbara Ward proposed to 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.” In 2017, Kate Raworth published a study in the Lancet providing documentation for social thresholds drawing on research from FAO, ILO, OECD, UNESCO, WHO, World Bank, etc...
• Thresholds Can Be Identified
  o Assuming thresholds exist in ecological and social systems, the next assumption is that they can, in fact, be identified, measured, and managed. The above references to the Planetary Boundaries and Doughnut research streams affirm this assumption.

• Thresholds Have Zones and Buffers
  o One challenge to applying thresholds is the non-precise nature of thresholds in general, and some thresholds in particular. Thresholds in ecological and social systems tend not to have hard, pre-defined boundaries, but rather ranges that represent “danger zones” where non-linear phase shifts can occur unpredictably. Natural and social dynamics typically have “buffers” as “safety nets” surrounding thresholds. These realities make it challenging to apply thresholds with precision, accentuating the value of an advisory body to provide guidance on these “safety net” zones.

• Thresholds Can Shift Dynamically
  o Thresholds are by definition not static, but rather they are characteristics of complex adaptive systems that respond interactively to changes in interrelated systems.

• Thresholds Are Being Crossed
  o A corollary of the question of whether thresholds exist is the question of whether thresholds are being crossed. The research suggests that four of the nine Planetary Boundaries are being overshot, and that all 12 of the Social Foundations are experiencing shortfall. So, the GTAC ToC considers it a safe assumption that thresholds are indeed being crossed, and that this will only increase going forward, absent significant transformation that attends specifically to thresholds.

• Supply & Demand Does Not Necessarily Allocate Resources Fairly, Justly, or Proportionately
  o Our current economic system relies on supply and demand (among other functions) to allocate resources, arguing that the “invisible hand of the market” guides the most rational distribution of resources for achieving desirable outcomes. However, this is demonstrably not the case, given the hyper-concentration of wealth and resources, and the persistence of suppressed wages (compared to productivity gains, for example) and social deprivation endemic to the economic system. So, existing market mechanisms alone are insufficient to result in outcomes that respect fair, just, and proportionate allocations of resources within their thresholds.

“The modern economic framework is deeply fractured. Supply does not measure planetary limits. Demand does not measure human needs. In short, supply does not create its own demand and a new system of value is necessary. We must begin measuring our carrying capacity: the distributed value of the resource thresholds of each eco-district in sustaining the allocations required to meet the needs of the population within that area.”

James Quilligan, Managing Director, Economic Democracy Advocates
• **Allocations Are Always Happening**
  - The GTAC ToC takes it as axiomatic that allocations are *always* happening – that is, ecological and social resources that are being used are *always* being divided amongst users. The key question is whether these resource allocations are happening in fair, just, and proportionate ways that preserve access to resources that are required for the wellbeing of *all* legitimate users (including human and non-human species – ie all flora and fauna in the biome) in the present and future.

• **Allocation Methodologies Can Make Fair, Just, and Proportionate Determinations**
  - Given that allocations are always happening, a fundamental assumption of the GTAC ToC is that there are in fact ways to allocate resources (and accountability for impacts) in ways that are fair, just, and proportionate. There may be diversity of interpretation of what constitutes fairness, justness, and proportionality. It is here that GTAC can provide guidance on how to judge such determinations, and adjudicate in instances where the fairness, justness, and proportionality of allocations is called into question.

• **Expertise & Experience Exists and is Available**
  - The GTAC ToC assumes the existence and availability of relevant expertise and experience to serve on the Council, as well as to provide foundational research support. Supporting this assumption is the fact that the necessary expertise crosses many diverse domains, including physical and social sciences, as well as ethics, governance, business, investment, economics, and the Commons, among many other fields. One key aspect will be to engage with experts with transdisciplinary understanding, who recognize the interconnectedness of complex adaptive systems.

• **Conflicts of Interest Are Endemic, and So Must Be Mitigated**
  - Although the field of initiatives addressing thresholds & allocations is only nascent, it has already fallen prey to conflicts of interest. The Global Thresholds & Allocations Council offers an antidote in that its mission is to adjudicate such instances by placing scientific and ethical integrity as well as multicultural respect above political considerations – while recognizing the reality that such considerations play a major role in most decision-making.

> “Conflicts of interest, in my experience, are the undermining feature of all the collaborative initiatives I’ve been involved with. This shouldn’t be a surprise because these initiatives are just a subset of the investment world, where conflicts of interest are endemic. The initiatives that have been most successful have tried to get around those conflicts of interest by focusing on quality of membership rather than quantity, and focusing on personal motivation rather than seniority or titles. This is a constant challenge because unless the individual can represent their organisation, their participation is of more limited value.”

Raj Thamotheram, Founder, Preventable Surprises
Co-Founder, Pharma Futures; Enhanced Analytics Initiative; and Network for Sustainable Financial Markets
• **Acceptance & Usage**  
  - In order for this ToC to activate, GTAC needs to earn respect through excellence of delivery on its mission in order to spur the emergence of widespread acceptance by diverse users, including the following:
  - **Thresholds- & Allocations-Based Initiatives**  
    - One key set of GTAC stakeholders is the universe of diverse initiatives working in the thresholds & allocations space. The assumption is that these initiatives will recognize and appreciate the value that GTAC offers by playing an overarching validating and adjudicating role, but it is possible that some of these initiatives will feel threatened and defensive about the existence of another player in the field (ie a “competitor”), particularly if they perceive themselves to be vulnerable to adverse judgments from the GTAC (eg on the validity of their threshold determinations or allocation methodologies.)

  "Initiatives like you’re proposing with GTAC must be part of something bigger, rather than driving your own thing and not collaborating. If the World Benchmarking Alliance can see that benchmarks need thresholds and allocations to help activate the system transformations that we are trying to achieve, then yes, what you’re doing can be a significant driver and therefore, what needs to happen is that we drive together.”

  Paul Druckman, Chair, World Benchmarking Alliance  
  Former CEO, International Integrated Reporting Council

  - **Companies**  
    - The assumption is that companies will benefit from the validation and guidance offered by GTAC on these issues that intersect with company operations and impact that fall outside the company’s knowledge and area of expertise.

  - **Investors**  
    - Given that many institutional investors are “universal investors” with holdings across the entire economy, the systemic risks they face from threshold transgressions are significant. And as “superfiduciaries,” they also face significant responsibility for stewarding their beneficiaries’ assets in ways that enable perpetual cash flows from the stocks of their equity and debt holdings. These realities underpin the assumption that investors will see benefit in the GTAC.

  - **Governments**  
    - Governments can set regulatory frameworks that apply thresholds & allocations – such as the US Environmental Protection Agency’s Total Maximum Daily Load (TMDL), a “calculation of the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards for that particular pollutant. A TMDL determines a pollutant reduction target and allocates load reductions necessary to the source(s) of the pollutant.” Such threshold-and-allocation-based regulations are exceedingly rare currently, but guidance from GTAC would enable a shift to such regulations.
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- Bioregions
  - Resource (and impact) thresholds are most often experienced in place-based ways – i.e., in specific bioregions. So, in addition to governments that operate according to political boundaries, initiatives are emerging that promote management of resources on a bioregional basis, which GTAC would support.28

- Funders with Aligned Vision Exist and are Willing to Fund Such an Initiative
  - Funding will be challenging, as the GTAC represents a body with no precedent, and therefore requires support from funders who understand the need to govern thresholds & allocations. We believe such funders exist, and increasingly recognize the need for systemic interventions such as wise governance of ecological, social, and economic thresholds and allocations of responsibility for meeting such thresholds.

  “Funding is incredibly difficult. If you haven’t got a funder who shares a vision with you, it’s more a customer-funded push than partner pull.”

  Nigel Topping, High Level Champion for Climate Action, COP26
  Former CEO, We Mean Business

Interventions

- Threshold Mapping
  - The first key GTAC intervention is to map the full landscape of ecological, social, and economic thresholds, in order to get a sense of scope. Databases of socioecological thresholds already exist, to use as building blocks.29

- Threshold Identification & Prioritization
  - After mapping thresholds, the GTAC will need to identify specific thresholds to address, and prioritize amongst thresholds which make sense to focus on first.

- Threshold Validation
  - Research on many thresholds exists, some of which has been interpreted with an eye toward facilitating application. A primary role of GTAC is to vet and validate the accuracy and appropriateness of these threshold determinations, in particular seeking to translate them into relevant formats for applications by users.

- Allocation Methodology Assessment & Validation
  - Multiple different allocation methodologies exist, for example per capita, economic (e.g. percent contribution to GDP), physical (i.e. sectoral), and geographic.30 These methods have been applied to climate / GHG thresholds successfully, though there is controversy in how some initiatives currently authorize usage of these approaches – hence the need for and value of a GTAC.31
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- **Allocation Methodology Development**
  - There are diverse means of allocating resources, so another intervention the GTAC would be expected to implement is to spur development of new allocation methodologies as the need arises.

- **Threshold & Allocation Adjudication**
  - The application of thresholds & allocations is inherently controversial, as is clear from Elinor Ostrom’s Nobel Prize-winning research on governing the Commons. She co-developed (with evolutionary biologist David Sloan Wilson and environmental scientist Michael Cox) a set of 8 Core Design Principles for managing common-pool resources, one of which calls for “fast and fair conflict resolution.” Such a function currently does not exist when it comes to thresholds & allocations, so the need for this form of intervention by GTAC is apparent.

**Indicators**

The United Nations Research Institute for Social Development (UNRISD) is currently conducting a four-year project on Sustainable Development Performance Indicators. One of the first reports in this project proposes a three-tiered typology of sustainable development performance indicators that is ideally suited as indicators for the GTAC ToC. The first two tiers are based on the Sustainability Quotient (S=A/N), which holds that Sustainability equals Actual Impacts (on the Carrying Capacities of Vital Capital Resources) over Normative Impacts (on the Carrying Capacities of Vital Capital Resources).

![Sustainability Quotient](image)

*Figure 5: Sustainability Quotient for assessing alignment with normative thresholds*

- **Three-Tiered Typology**
  - **Tier One Indicators: Incrementalist Numeration**
    - These indicators identify actual impacts (the numerator of the Sustainability Quotient), which are inherently incrementalist in nature. This indicator can be applied to GTAC’s work to identify initiatives and performance that can be considered “pre-threshold.” Such performance measures are necessary inputs to thresholds-based measurement, but in the absence of a thresholds-based denominator, these indicators fall short of measuring bona fide sustainability.
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- Tier Two Indicators: Thresholds-Based Denomination
  - These indicators identify normative impacts (the denominator of the Sustainability Quotient) that are based on thresholds and allocations. Therefore, these indicators are fundamentally important in identifying initiatives and performance that falls under the purview of GTAC.

- Tier Three Indicators: Catalyzing Transformation
  - These indicators are nascent, with few (if any) examples in existence, but there is significant development in process. These indicators will be equally important as Tier Two Indicators, as Tier Three Indicators will identify the kinds of \textit{bona fide} transformations that the GTAC seeks to catalyze. Indeed, the GTAC ToC process may well contribute to co-developing Tier Three Transformational Indicators.

Target Populations

- Thresholds & Allocations Initiatives
  - As mentioned earlier, initiatives active in the space of identifying thresholds and promulgating methodologies for allocating these thresholds are a primary audience.

- Companies
  - Companies are in early stages of activity on thresholds & allocations, as evidenced by the Science Based Targets initiative, and stand to benefit significantly from the additional layer of validation that GTAC provides, as well as from GTAC’s adjudication function, as an independent body from the T&A initiatives.

- Investors
  - Investors are just starting to enter the realm of thresholds & allocations, having moved closer through initiatives such as the Taskforce for Climate-related Financial Disclosure (TCFD), The Investment Integration Project (TIIP), 2° Investing Initiative, Planet Tracker, and the Science Based Targets Finance Initiative. With key thought leaders such as Keith Ambachtsheer writing about Threshold Investing, activity here is on the rise.

- Governments
  - The Paris Agreement on climate change is perhaps the highest profile example of governments making explicit commitments to a thresholds-and-allocations-based regime, specifically expressed through Nationally Determined Contributions (NDCs) as well as National Fair Shares allocations. And of course the scope of government responsibility extends well beyond climate change; for example, European governments are assessing national level alignment with the Planetary Boundaries.

- Bioregions
  - The Capital Institute’s Regenerative Communities Network is taking a bioregional approach to incubating regenerative economies that operate within the socioecological carrying capacities of their regions. And Economic Democracy Advocates has developed a methodology for measuring bioregional carrying capacity, which it has applied to the states of California (with a focus on the San Francisco Bay Watershed) and Maine. Ecological and social impacts are predominantly \textit{place-based}, so bioregions represent “ground zero” for implementing GTAC’s mission.
Figure 6: The bioregions around San Francisco & Los Angeles exceed their food carrying capacities\textsuperscript{44}

**Baselines**

- **Overshoot and Shortfall**
  - As illustrated earlier with the Doughnut graphic, the underlying research reveals that humanity is *overshooting* the carrying capacity thresholds in four of the nine Ecological Ceilings of the Planetary Boundaries, and *shortfalling* all twelve of the Social Foundations of the Doughnut.

**Success Thresholds**

- **Thresholds met**
  - In the instance of the GTAC, the thresholds of necessary and sufficient change are embedded within the work of GTAC, which is essentially providing information on thresholds of necessary and sufficient change. So the thresholds of success for GTAC would be the meeting of thresholds, such that humanity operates within social and ecological carrying capacities comprehensively.

**Timelines**

- **Tipping Points**
  - The primary timeline for thresholds is the proximity to tipping points of non-linear change – in other words, the danger zones. This differs for different thresholds, but the effectiveness of GTAC's work is ultimately tied to these tipping point timelines, which move ever closer the longer our economic system (and we actors within it) fails to align itself with social and ecological thresholds. Given that humanity is *already* “beyond the zone of uncertainty” (i.e. in the orange “high risk” zone) for two of the nine Planetary Boundaries, and into the “zone of uncertainty” (i.e. in the yellow “increasing risk” zone) for two others, the timelines for GTAC success lean more toward *yesterday* than *tomorrow*. 
The plausibility of this Theory of Change is directly related to its necessity: ecological and social systems that operate beyond their carrying capacities ultimately collapse, so if humanity wishes to avoid collapse (and if not, then navigate its consequences), it must self-regulate back within carrying capacities.

The first Oxford definition of feasible is “possible to do easily or conveniently.” By this definition, this Theory of Change is decidedly not “feasible,” as it will be neither easy nor convenient; by contrast, it will be exceedingly difficult and will introduce significant inconvenience, particularly for individuals, organizations, and entire societies accustomed to living well beyond their means, as the work of the Global Thresholds & Allocations Council will compel them to radically shift their lifestyles and fundamental assumptions of what a meaningful life entails. (We believe a life lived within fair share allocations of resources is more meaningful than contemporary existence.)

The second Oxford definition of feasible is “likely; probable.” Here again, the likelihood / probability of achieving the intended outcomes of this Theory of Change is not necessarily high; however, it is simultaneously absolutely required “if humanity wishes to preserve a planet similar to that on which civilization developed and to which life on Earth is adapted,” to quote climate scientist James Hansen and his colleagues. So, delivering on the proposed outcomes of this Theory of Change is non-optional: humanity simply must live within its means. Therefore, we believe the GTAC’s intended outcomes are not impossible.
We prefer to view feasibility through the lens that Muhammad Ali applies to the concept of impossibility:

Impossible is just a big word thrown around by small men who find it easier to live in the world they've been given than to explore the power they have to change it. Impossible is not a fact. It’s an opinion. Impossible is not a declaration. It’s a dare. Impossible is potential. Impossible is temporary. Impossible is nothing.

**Testable**

The ultimate testability of this Theory of Change is by the progress of the Planetary Boundaries and Doughnut Social Foundations toward returning to the “safe and just operating space for humanity.” It is also testable according to its degree of influence in the ecosystem of initiatives focused on thresholds & allocations, which can be quantified by the number of thresholds & allocation approaches that GTAC vets and validates, the number of adjudications it performs, etc..

**Theory of Change Critiques**

It must be noted that the practice of Theory of Change has been critiqued on a number of grounds. A 2014 paper identified six specific limitations of Theory of Change practice. Three of these limitations are potentially relevant to the GTAC case:

1. A Theory of Change approach can create space for critical reflection, but there is a danger that this is an illusory process.
2. Power relations between donors and implementers ... discourage critical reflection and therefore constrain Theory of Change approaches.
3. Politically expedient Theories of Change may be useful, but are unlikely to encourage critical reflection.

And in late 2019, in his book *Blue Marble Evaluation*, Michael Quinn Patton (one of the originators of Theory of Change) advanced a critique of the practice of Theory of Change after first establishing the value and success of the ToC practice:

To be credible, useful, relevant, and meaningful, a theory of change must be theoretically sound, empirically-based, and substantively relevant.

Theories of change identify and hypothesize the causal linkages that will lead to desired results. The influence of Weiss (1995) can be found in the fact that virtually every philanthropic foundation, major government agency, nonprofit, and international development organization now requires that a theory of change be included in funding proposals and development initiatives.

He then identifies significant shortcomings in the process:

The difficulty is that these funding institutions miss the part about having research-based and theoretically coherent theories of change.
Instead, what has emerged is a cottage industry of communication facilitators who take foundation and nonprofit staff through a retreat process of formulating something called a "theory of change" with no knowledge of what theory is, what a theory of change should do, or the underlying research findings that would inform a viable and meaningful theory of change.

The idea was never to just get a bunch of people together to share ignorance and biases, and fabricate a theory of change out of thin air, though in my experience that’s often what happens.

Thereafter, Patton introduced the concept of Theory of Transformation as a practice to augment Theory of Change practice, as transformation of complex adaptive systems surpassed what can be encompassed by Theories of Change.

I’m proposing to designate the integration of multiple theories that combine to explain transformation as a theory of transformation rather than a theory of change.

My biggest struggle is with Theories of Change, at least in the way they’re often explained by people. I always get comments on my model – people say, ‘where’s the start? I don’t see an entry.’ And we’re like, it’s not a linear process – there is no start, no ending – it depends on what you’re doing; it’s always a dynamic model of continuously flowing through a process. There’s not a clear goal at the start. It’s not that you can understand the problem and then solve it. Basically, we have different entry points and we formulate a lot of lenses to look through. But the whole process, the whole theory, is always about the dynamics. I like that you said it’s the Theory of Transformation – I’m 100% behind you.

Caroline Hummels, Professor of Design & Theory for Transformative Qualities, Eindhoven University of Technology

He then proposes the Theory of Transformation Principle, and its explication:

Premises: A theory of change specifies how a project or program attains desired outcomes. Transformation is not a project. It 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. A theory of transformation incorporates and integrates multiple theories of change operating at many levels that, knitted together, explain how major systems transformation occurs.

Michael Quinn Patton reviewed the Global Thresholds & Allocations Council Theory of Change, and he asserted that there are actually multiple Theories of Change embedded within the GTAC Theory of Change, and therefore it is a strong candidate for developing a Theory of Transformation. A logical next step, then, is to pursue transforming the GTAC Theory of Change into a Theory of Transformation, ideally with the direct support of Patton.
Conclusion

We conclude this Theory of Change document with a parting question:

Can you imagine humanity “meeting the needs of all within the means of the planet” (to riff on *Doughnut Economics* Author Kate Raworth’s quote from our cover page) without something like a Global Thresholds & Allocations Council?

We at r3.0 cannot; we firmly believe that a GTAC is necessary, so it is only a question of how best to nurture the development of this global governance body.

“This Council is important and necessary! All the multi-stakeholder collaborations I’m doing would really benefit from thinking in thresholds; the challenge – and also my dream – is to bring together people from different bubbles to learn about thresholds and allocations together in practice, on a very concrete level.”

Marielle Swinkels, Co-Director, Smarter Futures

We at r3.0 know very clearly that we cannot steward the Global Thresholds & Allocations Council alone; we know that it will require deep collaboration across cultures, geographies, and ideologies. Such collaboration runs counter to the competitive mindset that pervades current capitalist culture (which has arguably played an outsized role in creating the carrying-capacity-crossing conundrum we find ourselves in.)

But the Coronavirus crisis, in addition to raising carrying capacity consciousness (as we established at the outset), has also clearly demonstrated the human capacity to rise to the call of self-less collaboration to help alleviate unnecessary suffering of our fellow humans. And as more and more of humanity recognizes that steepening curves across ecological and social realms are crossing capacity thresholds all around us, they will be inspired to flatten those curves and return to meeting the needs of all within the means of the planet.

So, we now invite you to join us in this movement – seeing as you are reading this document, you are in a position to lend your strength to the cause in one way or another.

“There’s no use having a brilliant idea if we’re not willing to work with others, collaborating to get over the line – that’s the strongest measure of success, from my perspective.”

Mark Gough, CEO, The Capitals Coalition
The Second Part of this Feasibility Study provides preliminary details on how the Global Thresholds & Allocations Council intends to implement its governance, structure, and funding fulfillment. We are glad to provide this companion piece of the Feasibility Study to interested parties, upon request.

We thank you for your interest – for more information, please contact:

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### About r3.0

r3.0 promotes Redesign for Resilience and Regeneration.

As a global common good not-for-profit platform, r3.0 engages its global network of “positive mavericks” to crowdsource open recommendations for necessary transformations across diverse fields and sectors, in response to the ecological and social collapses humanity is experiencing, in order to ultimately achieve a thriving, regenerative, and distributive economy and society.

r3.0 aligns its level of ambition not to ideology, but to the transformation needs dictated by science and ethics.

r3.0 pursues its work through a commitment to pre-competitive engagement focused on nurturing the health and vibrancy of the Commons through market-making activities aimed at spurring the emergence of a regenerative and distributive economy.

“The UN Guiding Principles provide business the authoritative global standard on human rights, so I welcome the establishment of a Global Thresholds & Allocations Council to vet and validate such norms, standards, and thresholds across all impact areas (social, ecological, economic) as a way to institutionalize respect for social, ecological, and economic systems in light of inherent real-world limits and rights.”

John Ruggie, Former UN Special Representative for Business & Human Rights
Human Rights & International Affairs Professor, Harvard Kennedy School
Endnotes

2 Drew Harris, Tweet, 28 February 2020. https://twitter.com/drewaharris/status/1233267475036372992
6 Glen Fergus, Global average temperature estimates for the last 540 million years, https://commons.wikimedia.org/wiki/File:All_palaeotemps.png
7 William Catton calls our current time “Post Exuberant,” when the consequences of what he calls the “Age of Exuberance” (starting with when a dominance mindset compelling the take-over of a “new world” a half millennium ago, and hypercharged by the discovery, exploitation, and entrenchment of structural dependence on fossil fuels) come home to roost. William R. Catton, Jr., Overshoot: The Ecological Basis of Revolutionary Change, Urbana and Chicago: University Of Illinois Press, 1980.
9 Rockström et al, op cit.
“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.” p 52, United Nations Environment Programme, Raising The Bar: Advancing Environmental Disclosure In Sustainability Reporting, 2015. http://wedocs.unep.org/bitstream/handle/20.500.11822/9807/-Raising_the_Bar_-_Advancing_Environmental_Disclosure_in_Sustainability_Reporting-2015UNEP_Raising_the_Bar_2015.pdf?sequence=3&isAllowed=y; “Multilateral organizations (such as UN bodies) 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 readily and broadly applicable in practice by business, investment, and governing organizations, among others.” p 41, Bill Baue, Compared to What? A Three-Tiered Typology of Sustainable Development Performance Indicators: From Incremental to Contextual to Transformational, United Nations Research Institute for Social Development, Working Paper 2019-5. http://www.unrisd.org/80256B3C005BCCF9/httpNetITFramePDF?ReadForm&parentunid=CBE444C58139C5A8025848C00547012&parentdoctype=paper&netitpath=80256B3C005BCCF9/([httpAuxPages]/CBE444C58139C5A8025848C00547012/$file/WP2019-5--Baue.pdf


Global Commons Alliance. http://globalcommonsalliance.org/


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28 Capital Institute, *Regenerative Communities Network*. https://capitalinstitute.org/regenerative-communities/

29 Resilience Alliance, *Thresholds Database*, https://www.resalliance.org/thresholds-db


31 The Science Based Targets initiative biases its validation process toward its own (sector-based) methodology, and away from economic allocation.


37 *Ibid*.


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41 Larsen, Lung & Hauser op cit.

42 Capital Institute, Regenerative Communities Network. [https://capitalinstitute.org/regenerative-communities/](https://capitalinstitute.org/regenerative-communities/)

43 James Quilligan, Dave Cunningham, Patti Ellis, and James Kolb, Food and Water Sustainability in the San Francisco Bay Watershed, Economic Democracy Advocates, October 2019.

44 Ibid


47 Ibid.


50 Ibid.
