Student Guide to Mapping a System

By Anna Johnson, Daniela Papi-Thornton, and James Stauch

Map the System is an initiative of the
Skoll Centre for Social Entrepreneurship,
Saïd Business School, University of Oxford

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ABOUT THE AUTHORS & SPECIAL THANKS

This Guide was co-created by Daniela Papi-Thornton, who runs an educational consultancy Systems-Led Leadership, and Anna Johnson and James Stauch of the Institute for Community Prosperity at Mount Royal University (MRU). Daniela was formerly the Deputy Director of the Skoll Centre for Social Entrepreneurship at Oxford's Saïd Business School. While there, she designed the **Map the System** challenge based on her systems learning tool, the Impact Gaps Canvas, which was funded by the Clore Social Leadership Program. Anna brings a unique perspective as a past student participant in **Map the System** (2016). She went on to manage and support the on-campus contest at MRU, and is currently managing the Canada-wide competition. As the Director of the Institute, James has hosted the competition on the MRU campus, and has taught a credit course designed around **Map the System**.

Additional support for this initiative was provided by Julian Cottee and Gianna Goulding from the Skoll Centre for Social Entrepreneurship at the University of Oxford, who manage Map the System globally. The document was designed by Maria Perez. Many of the video links included in this document come from the +Acumen Systems Practice course produced with The Omidyar Group[1] . Special thanks to Rob Ricigliano, the lead course instructor, and the teams at both +Acumen and The Omidyar Group for granting the use of this content. Finally, thanks to all of the social impact educators around the world who dedicate their professional lives to helping people have high-impact careers. Many educators have designed, suggested, commented on, or contributed to the tools described in this Guide, and we're grateful for their contributions and thankful to be part of a network committed to sharing systems education.

ABOUT MAP THE SYSTEM

Map the System[2] is a global competition that invites students to think differently about social and environmental change, starting with an understanding of a challenge and its wider context. Mapping a system provides an opportunity to think about the context surrounding a challenge and the many interacting factors that contribute to its development – whether they are economic forces, political movements, or global trends.

ABOUT THE CONTRIBUTORS

Map the System is an initiative of the **Skoll Centre for Social Entrepreneurship**, based at the **Saïd Business School, University of Oxford**. The goal of the Skoll Centre is to maximise the impact of social entrepreneurship in transforming unjust or unsatisfactory systems or practices around the world in order to address critical social and environmental challenges.

Systems-Led Leadership, created and operated by Daniela Papi-Thornton, is an online resource[3] and consulting practice intended to help practitioners and educators design learning, leadership, and funding programs that focus on helping future changemakers understand systems. The Impact Gaps Canvas[4], her 'Tackling Heropreneurship'[5] report, and her TEDx talk on 'Reclaiming Social Entrepreneurship'[6] are all available online.

The Institute for Community Prosperity connects students with social impact learning through applied, community-partnered research, creative knowledge mobilization, and systems-focused education. It is based at Mount Royal University, an undergraduate liberal arts institution in Calgary, Canada. The Institute designs and hosts learning experiences to help students lead transformative change in their communities.

RECODE serves as a funder, capacity builder, and convener, and is a project of the Montreal-based McConnell Foundation. RECODE supports the capacity of schools to weave social innovation tools and practices into the very fabric of campus and community culture. Through working groups and national gatherings, RECODE brings together individuals in post-secondary education to learn from each other and amplify their social impact.

The Trico Charitable Foundation seeks to close gaps in society by provoking innovation and building capacity in social entrepreneurship.

January, 2019

About this Guide

Welcome to the ***Student Guide to Mapping a System***. This twelve-step Guide, designed for students participating in **Map the System**, a post-secondary global competition hosted by the Skoll Centre for Social Entrepreneurship at the Saïd Business School, University of Oxford, will help walk you (and your team, if you have one) walk through the process of mapping a system. This Guide will provide you with advice and additional tools for each step of the process, from picking a social or environmental challenge, to researching it and presenting your analysis and ideas (visually, orally, and in writing).

WHO IS THIS GUIDE FOR?

While this Guide was specifically designed for **Map the System** participants, it will be **helpful for anyone who is passionate about social change** or wants to **contribute to tackling a social or environmental challenge in a local or global context.** It is *not* simply a step-by-step how-to guide for a student competition. Rather, it is designed to be a tool that supports learning and action, and introduces readers a range of topics related to systems practice. It provides a high-level overview of methods for understanding complex problems and identifying opportunities to contribute to systems change. We hope that it is also useful for educators (for whom we are developing a compendium) and those outside academia – activists, entrepreneurs, funders, civil servants, and practitioners – who want to understand or tackle a social or environmental issue from a systems perspective.

This is for every kind of student, at every level, in every kind of field.

There is a lot of buzz about 21st century skill sets, often summarized as *critical thinking*, *collaboration*, *creativity,* and *communication*. **Map the System** asks students to draw on all of these skill sets in a way that gets students thinking about problem-solving, but specifically in the context of real-world complexity. **Map the System** isn't just for budding 'social entrepreneurs' (watch author Daniela Papi-Thornton's TEDx Talk, 'Reclaiming Social Entrepreneurship'[7]). It is for *any* student who wants to have a high-impact career, in any field, in any sector. As such, this Guide is useful for any student, in any discipline, at any stage of study (from the early stages of your first diploma or degree through graduate studies and beyond). For example, the winning **Map the System** team in 2017 was composed of an environmental science undergrad, a business undergrad, and a medicine student. They each brought unique knowledge, experience, and important strengths to the team as they engaged with the challenge of medical waste in hospitals.

If you are a business student…	If you are a humanities, science, or social science student...	If you are in a professional faculty (e.g. engineering, journalism, law, medicine, planning, public administration, social work, etc.)...
This is different than a traditional social entrepreneurship pitch competition, and it is very different than a case competition. If you are considering starting a social venture, **Map the System** **is an opportunity** to dive into the nature and complexity of the problem you are trying to address. You will need to set your venture or idea aside during the **Map the System** process, as the competition is not about coming up with a solution. That said, if you did later move forward with a venture, the **Map the System** process should have helped you develop a better understanding of your market, the players with whom you may want to collaborate, and opportunities to contribute to systemic change. Many business ventures (whether social or commercial) fail because the problem and context is poorly understood. See the HBR article 'Why Social Ventures Need Systems Thinking'.[8]	You may already be familiar with complexity – the complex nature of ecosystems, public policy, human behaviour, aesthetic judgements, or social movements, for example. On the other hand, you may have less exposure to how this complexity manifests in the world around you and the models and impact of the entities working within these complex systems. Different from the passive, static format of an academic 'poster presentation', **Map the System** **is an opportunity** to better understand (and make understandable for others) how a system that is currently resulting in some form of harm or degradation has the potential to change.	Students in professional faculties have opportunities to interact with the 'field' they are going into, which brings practical knowledge about who the players are, what the policies and regulations are, etc. Having this level of practical content depth can be an important strength in this type of project. Indeed, a nursing undergrad took top prize in **Map the System** 2018. **Map the System** **is an opportunity** to think beyond the system 'as it is' and imagine how transformation might occur – what is bothering you about the status quo? What might the field look like that you wish to work in, not the one that is waiting for you? Where are the opportunities for change?

The most important prerequisite for Map the System is that you are interested in caring about something beyond yourself and your household – i.e. in the broader community or world. If you have noticed something broken or sub-optimal in a system you interact with, even from a distance, and it's keeping you awake at night, this is your chance to learn more about opportunities for change. **And if you don't yet know much about your chosen topic, this is your chance to get educated and invested.**

How will this Guide help Map the System entrants

The competition was initially designed around the Impact Gaps Canvas[9], a tool designed by Daniela Papi-Thornton, former Deputy Director of the Skoll Centre for Social Entrepreneurship. In reflecting on the first years of the competition, Daniela, the other co-authors of this report, and the current team at the Skoll Centre have realised that the Canvas alone is not enough to provide students and educators with the tools and questions needed to 'map a system'. As such, this Guide is designed to provide a wider breadth of tools, questions, and guidelines for students entering the competition and educators looking to embed a systems thinking mindset into their social change curriculum.

We know this list of tools and activities is only the tip of the iceberg when it comes to systems education, and our hope is that you all, as **Map the System** participants and educators, will help us continue to refine and add to these resources over the years.

Photo by Fisher Studios courtesy of Skoll Centre for Social Entrepreneurship, Saïd Business School

USING THIS GUIDE

At the end of each section, we have also included recommended exercises or readings (ACTIONS), and optional learning resources (DIGGING DEEPER), for those interested in learning more about a particular concept.

Systems change education, much like systems change itself, is complicated, non-linear, and has no clear starting point or fixed linear path. In putting words down on paper, we had to pick a 'pathway' for teaching this work. The Guide is organized into 12 'steps', but feel free to jump in wherever you like, or wherever you feel you need the most additional support. Throughout the document, we have suggested videos to watch, things to read and tools to try. These are hyperlinked in the online version, but for those who prefer to print this report, there are endnotes for each section with the full URL link.

We hope this Guide and the suggested resources will not only help you navigate the **Map the System** process, but will also support you in your own future contributions to systems change.

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Understanding System Dynamics and Relationships

Identifying Impact Gaps and Levers of Change

Putting Learning Into Action

Do not be overwhelmed by the length of this Guide!
Our expectation is that some of you will read it from end to end in detail, and some will simply pick and choose the areas of relevance which are needed to support your work.

For those registered for Map the System with limited time, we recommend these sections:

- **Impact Gaps Canvas:** Review this section and complete the question-generating activity.
- **5Rs:** Use this tool, or another mapping tool of your choosing. Be sure to map all five Rs, including relationships, as well as the nature of those relationships, to help explain the results of the system.
- **Levers of Change:** Review this section, including Donella Meadows' piece on leverage points as it should help you explore "deeper" points and opportunities for increased impact.

Overview

WHAT IS MAP THE SYSTEM?

Photo by Fisher Studios courtesy of Skoll Centre for Social Entrepreneurship, Saïd Business School

Social and environmental change are complicated. Mapping is a way of understanding complexities and identifying possible points of intervention. **Map the System** is a one-of-a-kind competition that tasks students and educators to think differently about social, environmental, and economic problems. Unlike business plan or pitch competitions, where participants are rewarded for their solution ideas, **Map the System** winners are celebrated for their in-depth understanding of a challenge, their understanding of what solution efforts are already being tried, and their identification of gaps or opportunities for increased impact.

Map the System invites participants to use 'systems thinking' as a guiding approach for addressing global and local challenges. It encourages students to think about possible high-impact career paths beyond the role of entrepreneur – to include the skills of systems building (as described in Oxford Saïd Business School professor Marc Ventresca's TEDx Talk, 'Don't Be an Entrepreneur, Build Systems'[10]) or 'entrepreneuring' as a verb (as described by Dr. Pamela Hartigan, former Director of the Skoll Centre for Social Entrepreneurship in her article, 'The Promise of Entrepreneuring'[11]). The competition is open to students and recent graduates of participating institutions worldwide.

As of 2018, **Map the System** is running at over 40 global institutions. The McConnell Foundation's RECODE Program, also funded by the Trico Charitable Foundation, supports **Map the System** across Canada. Other host institutions operate their own **Map the System** competitions around the world, from Melbourne and Cape Town to Boston and Shanghai. Winners from around the globe convene at Oxford in June and compete in the Global Final. The competition was started to provide a counterpoint to the growing number of social business competitions and hackathons. Those events typically do not ask students to take a systems view of their chosen challenge, so **Map the System** was launched to provide the incentive and impetus for embedding systems thinking and systems change theory in social entrepreneurship education.

For any student requiring further information on competition details (key dates and deadlines, judging criteria, etc.), please refer to the **Map the System** website[12].

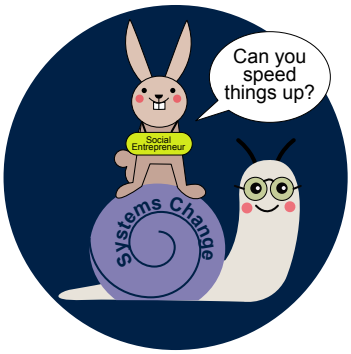
What is the goal of Map the System?

One of the reasons **Map the System** was created was to counter the often linear, analysis driven, siloed approach to change fueled by some university business plan competitions. In these competitions, participants are often asked to try to prove why their efforts are better than their competitors', how their work is innovative and unique, and why their work is going to lead to large-scale change. To fit into the format of these pitch competitions, students are asked to present linear stories about how their innovative idea will create change, often overlooking the big picture of the social and/or environmental systems and the context related to their chosen challenge. In a ten-minute pitch about your 'solution', you don't have time to focus on systems dynamics or a more nuanced look at the possible impacts of your efforts, including externalities and complex relationships, some of which might be more circular than linear. While **Map the System** still requires a presentation, and therefore some linearity of thought as to what to present first and in what order things follow, it was designed to foster a systems thinking mindset among participants, inviting a research and presentation process that is focused on system nuances, which are often overlooked in other university competitions.

Learning Service[13], a book co-authored by Daniela Papi-Thornton, is framed around a certain definition of the Buddhist vajra symbol: **'Action without learning is ignorance. Learning without action is selfishness'[14].**

Competitions related to social change are usually more about trying to *solve* problems than they are about understanding them. The 'goal' of these competitions are typically transparent and action oriented; their aim

is not necessarily to encourage an academic process. Instead, they are designed to propel people through such a process in order to take action. These competitions tend to be heavy on action but light on learning, whereas the goal should be a healthy balance of both.



Credit: Systems-led Leadership.com 2018

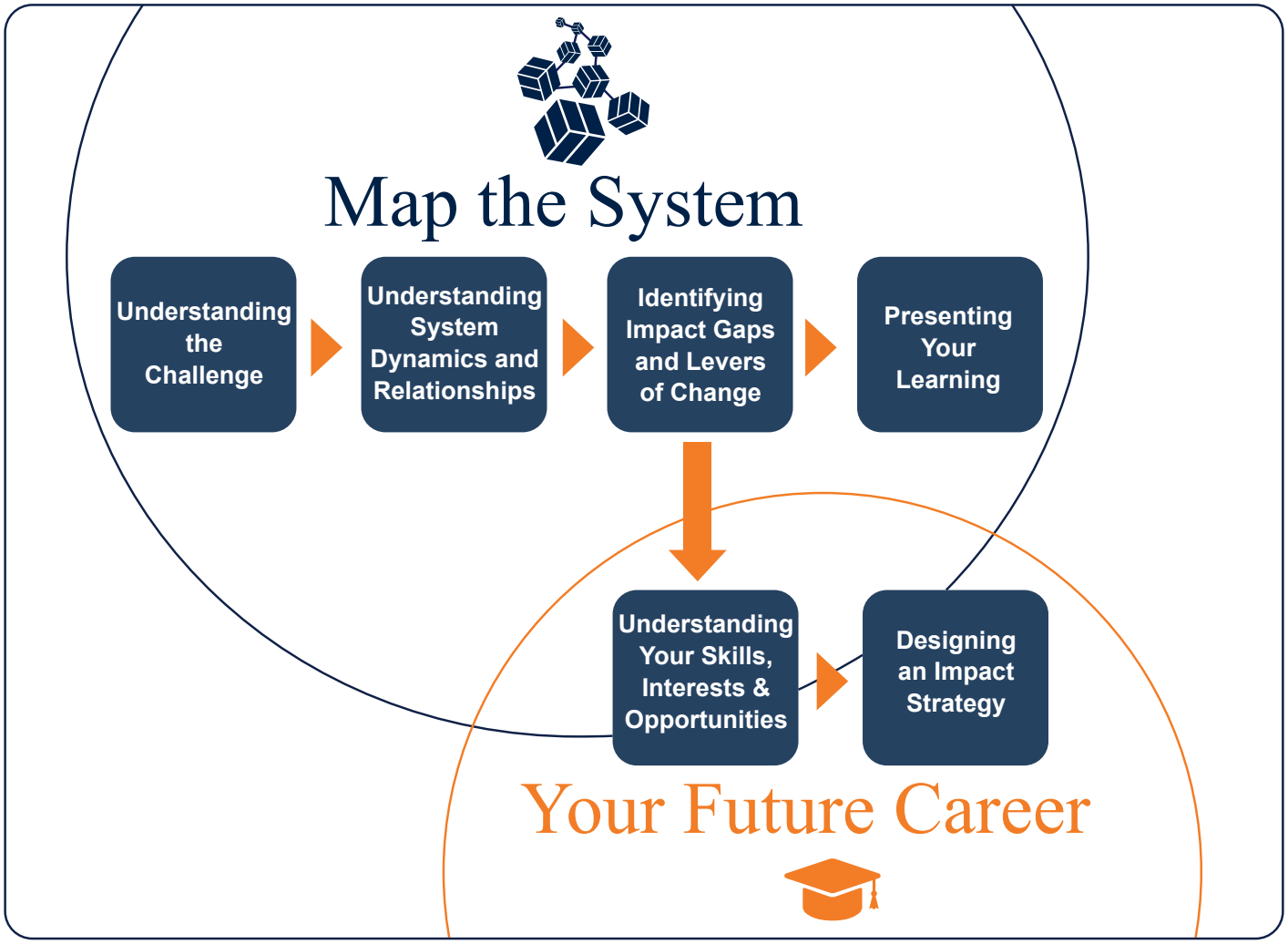
The idea of doing research about a challenge or mapping a system can seem like a much slower and less exciting process than a hackathon sprint. But, like business plan competitions and hackathons, **Map the System** was not designed to simply be an academic exercise. This is not an academic paper or poster presentation – processes which are heavy on learning, but light on action. Again, the goal is a healthy balance of both.

In other words, the goal is not to support you in a research and system mapping process as an academic exercise or box-ticking curricular achievement. Nor is the hope that participants will go on to launch future social ventures. **The hope is that, by participating in Map the System, you will better understand both your chosen challenge as well as a systems analysis practice, an important 21st century skill, and then be able to put those skills to use in future high-impact careers of your choosing.** If you use what you learn through this process to design better-informed future social interventions, find a credible host organisation for a future internship or job, or use some of the tools and systems thinking practices in your future work, we'll have considered our job well done.

This phrase also sums up the motivation for **Map the System: taking action and jumping in to 'fix' a social problem, and marrying ourselves to a business model with which to do so, when we don't yet understand the context of that problem is *ignorance*. Learning simply for the sake of learning, without hope of that learning fueling positive future action is *selfishness*.** While **Map the System** may be designed around learning, rather than immediate action, it is designed to be learning for the sake of more informed future action – honouring the message of the vajra.

It bears repeating… '
Action without learning is ignorance. Learning without action is selfishness'.

This diagram illustrates the high-level overview of our view of the **Map the System** progression and how it might help fit into your personal career trajectory:



The bulk of this Guide will focus on the **Map the System** process, and the final section will help you consider 'What's next?' and how you might use your learning from this process in your future career planning.

Note: Starting in the 2018/2019 competition, Map the System has partnered with The Omidyar Group and +Acumen to invite Map the System participants into the online Systems Practice course. While there are many areas of overlap, the Systems Practice course and Map the System have two different target audiences: the target audience for the +Acumen course is primarily for people within existing organisations who are already taking action towards systems change, while Map the System is designed to help those learning about an issue to better understand their chosen challenge before they consider taking action. This Guide was not designed to deliberately align with the +Acumen course, though areas of overlap are highlighted throughout. It is likely that the first half of the +Acumen course, focusing on systems learning and mapping, will be most useful for Map the System participants, whereas the strategy design portions of the course do not align with the requirements of Map the System. It is our recommendation that all Map the System participants register to at least audit the +Acumen course, as their videos and educational material will be helpful to you in this process and beyond.

ACTIONS:

- If you are participating in the **Map the System** competition, carefully review the **Map the System** entry criteria and deadlines, available on the **Map the System** website[15], to ensure you can meet the required participant criteria and the registration/submission dates. As a reminder, only one person from each team needs to meet the participant criteria, and the other team members can be drawn from outside the host organisation.
- Review the **Map the System** evaluation rubric[16], available in the Guidelines section of the **Map the System** website[17]. It is worth reading through this in detail to understand what the judges are looking for in evaluating your submissions. Note that, in past years, the written submissions and in-person presentations at the Canadian and Global finals were collectively evaluated. Now, the written submissions and in-person presentations are graded separately, which means you will want to pay close attention to the evaluation criteria for both sections.
- Watch the video[18] outlining the free +Acumen Systems Practice course produced with The Omidyar Group[19]. Even if you don't intend to take the full course, you will find useful videos, tools, and explanations in the video and it will be worth signing up so you can access that information if/when you need it. You might also want to scan their fully open source Systems Practice Workbook[20].

Understanding the Challenge

Understanding Systems

WHAT IS A SYSTEM?

'The systems-thinking lens allows us to reclaim our intuition about whole systems and hone our abilities to understand parts, see interconnections, ask 'what-if' questions about possible future behaviors, and be creative and courageous about system redesign.'
- Donella Meadows´, Thinking in Systems: A Primer (2008)[21]

We hear and use the word 'system' all the time, but how do we recognise a system when we see one? According to Donella Meadows, a pioneer in systems thinking, 'a system is an interconnected set of elements that is coherently organized in a way that achieves something (a function or purpose)'[22].

A **system** comprises:

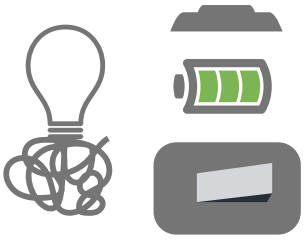
1. **Elements:** These are the different, discrete elements within the system (for example, organs in a human body, or animal/plant life in an ecosystem): in other words, the 'nouns' in your system – people, places and things. In a social system, elements might include different types of organisations, programs, products, money, institutions, and – of course – citizens (clients, patients, activists, consumers, leaders, etc.).

2. **Interconnections:** These are the relationships that connect the elements (for example, food webs and predator-prey relationships in ecosystems). In thinking about interconnections, remember that the goal is not to exhaustively list every element in a system, but instead to understand and map the interconnections between them. It's the quality, nature, or lack of those relationships which help tell the story of what is happening inside of and as a result of the system. In social systems, interconnections might include networks and coalitions, funding relationships, supply chains, service relationships, advocacy and education, and many other types of interconnections.

3. **A function or purpose:** This is sometimes hard to identify, as the 'purpose' of a system is not explicitly stated anywhere and cannot be found by reading the mission statements of any single actor in the system (no one organ, tissue, or cell, for example, may have the mission to keep you alive, but collectively that is the function or purpose of the system we call the human body). Meadows writes: 'purposes are deduced from behavior, not from rhetoric or stated goals… Systems purposes need not be human purposes and are not necessarily those intended by any single actor within the system. In fact, one of the most frustrating aspects of systems is that the purposes of subunits may add up to an overall behavior that no one wants'.

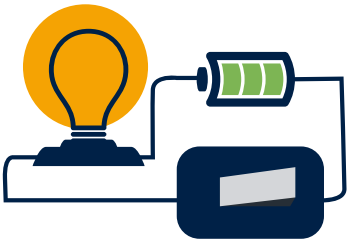
What is a System?

Before digging into the details of systems thinking, let's look at what a system is and what it isn't.



This is a heap. Not a system.

Nothing changes when a part is taken away or added to this heap.



This is a system.

Change definitely happens if you add or take away a part of the system.

Adapted from: Institute of Play

Characteristics of Systems

Systems range in size and complexity, and can be natural (for example, forests and the solar system) or human-made (airports and schools). Consider the human body: cells combine to create tissues, which in turn make up organs, which comprise systems, such as the respiratory system, the circulatory system, the skeletal system, and so on. The body is therefore a complex system with multiple subsystems. When one part of a system changes, it affects other parts as well, and ultimately affects the stability and sustainability of the system[23].

The behaviour of complex systems is unpredictable and quite different than simply the sum of its parts[24]. Complex systems typically exhibit these characteristics:

1. **Self-organisation:** the capacity to create new, ordered structures or patterns out of disorder. This can be seen in the swarming formation of a flock of birds, or the schooling patterns of fish, which emerge without external direction, manipulation, or control. Instead, there is continual re-organisation based on feedback from the environment.
2. **Emergence:** the presence of a new behaviour, pattern or structure that results from the interactions between the elements of the system[25].
3. **Hierarchy:** the notion that systems evolve from the bottom up – from simple to complex. As the system grows, subsystems emerge.
4. **Resilience:** the ability of a system to recover and adapt following a disruption.

Systems also display characteristics such as non-linearity, feedback loops, patterns, and emergence, which will be explained later in detail within this Guide.

WHAT IS SYSTEMS THINKING?

'Systems thinking is, more than anything else, a mindset for understanding how things work. It is a perspective for going beyond events, to look for patterns of behaviour and seeking underlying systemic inter-relationships which are responsible for the patterns of behaviours and the events. Systems thinking embodies a world view that the foundation for understanding lies in interpreting relationships within systems.'
- Gene Bellinger [26]

In simplest terms, systems thinking is a way of seeing and talking about complex problems. It is a framework for seeing connections and interrelationships rather than just things, and for seeing patterns rather than isolated events. Systems thinking demands a deeper understanding of the behaviour of systems and acknowledges the relationship between interacting components.

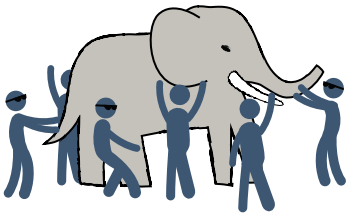
Peter Senge, a systems scientist and author of the bestselling book, *Fifth Discipline*, **describes systems thinking as 'seeing the connections in any situation,' or, from another angle, 'the ability to see the consequences of my own actions'[27].** When someone seeking to impact social change looks at connections between different components of a system, it helps them consider both a wider range of causal relationships and a broader set of implications related to possible actions.

Why should we use systems thinking?

'Systems thinking... is a framework for seeing interrelationships rather than things, for seeing patterns of change rather than static snapshots... Today systems thinking is needed more than ever because we are becoming overwhelmed by complexity.'

'None of us see the system. We see our own part based on our own background and history. And we all think we see the most crucial part.' - Peter Senge[28]

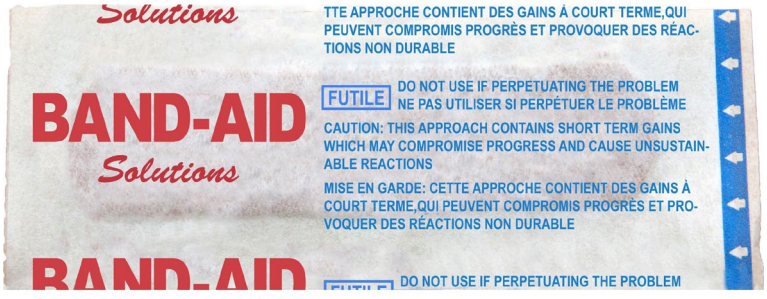
The Blind Men and the Elephant[29] is a well-known ancient parable that tells a story about a group of six blind men who encounter an elephant, each touching a different part of the animal in an attempt to determine what is is. The man who feels the trunk believes that the elephant is like a snake. The man who feels the knee insists the elephant is like a tree trunk. The man who feels the tail is convinced that the elephant is really like a rope and so on. Arguments ensue, with each man becoming more entrenched in his version of reality, unable to perceive an inclusive way[30]. The fable teaches a simple lesson about the importance of using systems thinking that is often ignored: **the behaviour of a system cannot be known just by knowing elements of the system[31].** The ancient tale illustrates that while each individual can identify a part of the elephant (an element), the way these parts fit together (the interconnections) is missed, as is the fact that the elephant is a sentient being (the purpose).



It is only in removing our blindfolds that we can possibly come to understand the system as a whole. Using a 'systems thinking lens' allows us to look at situations and contexts in a way that enables us to see the various component parts and their relationships. As Peter Senge said, seeing these connections in turn helps us better understand the possible consequences of our actions[32]. **This is why we believe systems thinking is important for anyone looking to impact social change: understanding the broader system enables us to make more deeply informed choices and respond to root causes of problems versus reacting to symptoms.**

For a simple illustration of a systems thinking approach – in other words, breaking a system down into its component parts and steps and then reassembling that information into a coherent model – watch the TEDGlobal talk by Tom Wujec on 'How to Make Toast'[33].

In his book *Winners Take All* and his New York Times article 'Beware Rich People Who Say They Want to Change the World[34]', Anand Giridharadas argues that many social innovation and entrepreneurship interventions might seem 'innovative', but are in fact more like bandaids than long-term solutions, as they are not designed to change the systems which are causing the problems in the first place. While his article helps articulate this problem, it does not elaborate on a solution. We believe that one way to counter the problem he highlights is to promote systems thinking and help future changemakers see challenges through a 'systems thinking lens.' Education promoting systems thinking helps people differentiate between 'bandaid' interventions and those designed to change to the design of a system. This process is a bit like learning to ride a bike as well, because once you start to see the world through a systems lens, it's hard to un-see global interconnections.



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We aren't the only ones who believe systems thinking is important: the Waters Foundation has been teaching systems thinking for over 25 years. To get a good sense of the 'Habits of a Systems Thinker'[35] you can check out the cards and mobile app created by the Waters Foundation to help people develop as systems thinkers.

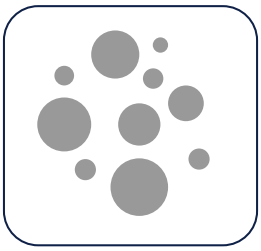
WHAT IS SYSTEMS-LED LEADERSHIP?

As mentioned, **Map the System** was created to counter the start-up mentality of social change education in an innovation context. The skills of starting and growing a new venture are important skills for social change, but not all of us were designed to be start-up founders, and not all change can come from new ventures. Some must come from within the governments, non-profits, and corporations that already exist.

Systems-Led Leadership is an approach which acknowledges that, while significant change is possible through the starting and scaling of new ventures or the long-term collective impact work of a set group of actors, long-term change in complex systems requires an array of other roles to create and sustain change. In Daniela's work on systems-led leadership, she describes the term as "Taking consistent actions, based on some understanding of a system, with the intention of improving the impact of another node(s) in the system." In other words, using a systems perspective to help guide our actions, with the intention of contributing to collective systems change.

Models for Solving Systemic Problems

Existing Landscape of Solutions Efforts

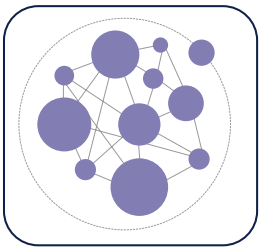


- A mapping of the existing actors impacting or contributing to change in any of the complex systems impacting our society or environment.
- Nodes could be any actor from individual non-profits and social ventures, to government initiatives, corporate actions, and activist movements.
- Gaps could be missing opportunities for knowledge sharing and collaboration, policy change opportunities, new product or service needs, or missing knowledge.

The Social Enterprise Start-up Model

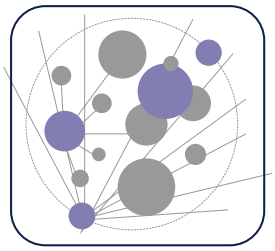
- The organization-led approach to social change is biased towards enterprise and enterprise leadership, discounting a number of other paths to scaling impact.
- This model is predicated on the idea that a successful organization can scale to the size of the problem, leaving the onus of change on the act of picking the right individual organizations to help scale, thereby creating competition among individual actors trying to prove how their model will succeed.

Systems Leadership & Collective Impact Model



- Collective impact efforts are generally coordinated efforts which require longer-term commitments from actors within the collective.
- The role of 'systems leader' is often described as a conductor-like role, filled by an experienced and well-connected actor driving or contributing substantially to collective impact efforts.
- Efforts have been made to identify and fuel the vast skillsets and experience attributed to such a role while less attention has been paid to the contributions of other less involved actors outside the collective.

The Systems-led Leadership Model

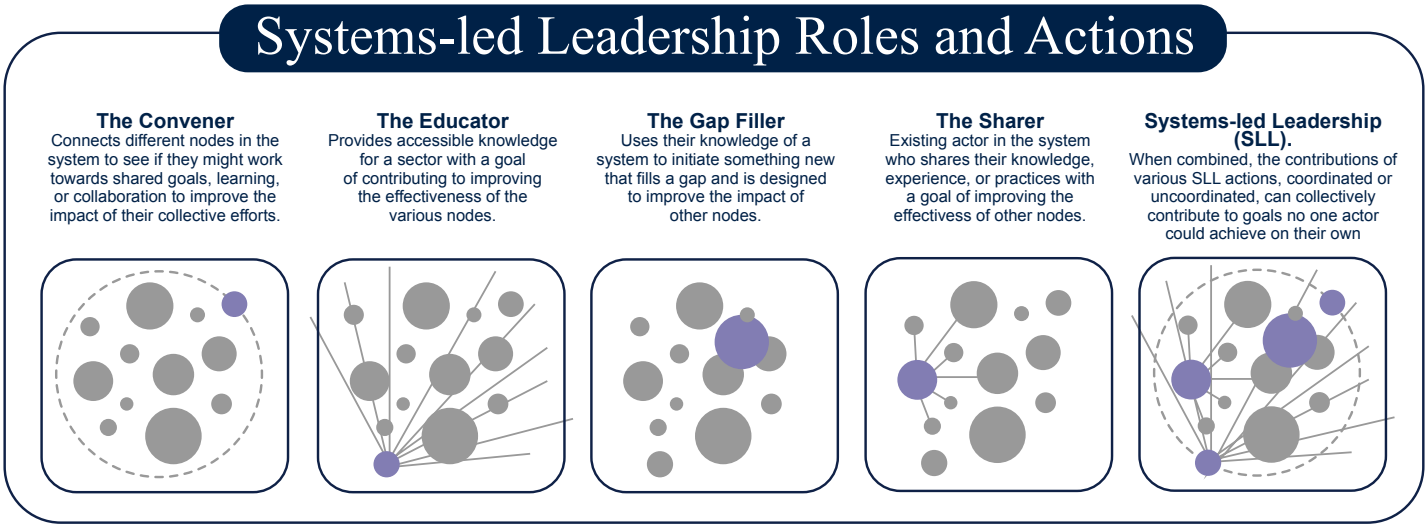


- The systems-led leadership model acknowledges the roles any actor can intentionally take tocontribute to changing systems by aligning their actions to improving the impact of other nodes in the system.
- While venture creation and coordinated large-scale action is included in the model, this approach also celebrates and educates for contributions outside of those actions inviting all members of society to contribute to systems change through systems-led actions.

As such, our hope is that tools like this Guide will help social change educators bring systems thinking to a wide array of students – not just those interested in social entrepreneurship – so that all graduates of our programs can take systems-led actions and contribute to systems change from whichever roles they find themselves in.

This first diagram, from a forthcoming article by Shauna Monkman and Daniela Papi-Thornton, highlights difference between the traditional social enterprise start-up model and collective impact model and a Systems-Led Leadership education model that focuses on teaching a range of systems-led skills applicable for a range of roles.

The second diagram highlights some of the roles one might take in contributing to systems change. Note that, unlike 'social business founder,' these roles do not require running an organisation or working in the business sector; these roles can be filled by anyone in any type of organisation, from media and academia to non-profits, governments, or the corporate sector.



Hopefully, thinking about the roles one might play in contributing to systems change will help you consider how you might use your learning from **Map the System** to effect positive change. That might be through taking the role of 'educator' by sharing your learning from this work, or 'convenor' by bringing a range of people together to discuss a challenge. Our hope is that, in learning the skills of mapping a system, you will build a skillset and a mindset that you can take with you into your career and translate into future action.

WHAT IS SYSTEMS MAPPING?

Systems mapping is a visualisation technique used by change agents to make sense of complexity. Systems maps help describe and diagnose a current state of a given system and identify gaps and opportunities for improvement. Mapping out a system allows us to think about context and the many interacting factors that contribute to the development of the issues facing us – whethere they are economic forces, technological

advancements, political movements, or global trends. It gives us the tools to understand the whole picture and takes us out of the silos of our own experience and thinking. In a TEDxOxford talk entitled 'Mapping Society for a More Meaningful World'[36], Steve Whitla explains why we need maps for social systems.

Remember that mapping – by necessity – is an abstraction of reality. See Farnam Street's 'The Map Is Not the Territory'[37] for a quick read about the use of maps as models of reality.

To date, there are few readily accessible guides for systems mapping, but there are many tools available online which can be used in a system mapping process. Kumu[38], a mapping software tool, provides guidance and ideas for building and using systems maps. The U.S.-based consulting firm FSG has a Systems Thinking Toolkit[39] that includes a variety of mapping tools, such as 'actor mapping', 'ecocycle mapping', 'timeline mapping', 'trend mapping', and 'appreciative inquiry' (a form of asset mapping). Horizons Foresight, an in-house policy analysis group within the Government of Canada, has produced a simple 16-page annotated slide deck[40] for thinking about how to map a system.

There are a wide variety of other methods for mapping systems, some of which will be explained later on in this Guide.

ACTIONS:

- In the +Acumen course, instructor Rob Ricigliano of The Omidyar Group provides a helpful recap of what systems practice is. You can find the video here[41].

DIGGING DEEPER:

- Watch Tom Wujec's TED Global talk on 'How to Make Toast'[42]**.** If you are part of a team, try out the Draw How to Make Toast[43] exercise with your group.
- Check out the 'Habits of a Systems Thinker'[44] cards and mobile app created by the Waters Foundation to help people develop as systems thinkers.
- See Farnam Street's 'The Map Is Not the Territory'[45] for a quick read about the use of maps as models of reality.

Identifying a Challenge

BEFORE YOU BEGIN

Not all challenges need a systems mapping approach. In general, a systems mapping approach is most useful when dealing with complex, adaptive challenges. **As you begin to explore topics of interest, it's important to take a step back to consider the complexity of your challenge: think about the problem itself and the social dynamics around it, as well as the broader context.** If your challenge is relatively well understood and there is broad agreement on related solutions, then you may need to look for a more complex challenge.

What are complex challenges?

Complex, adaptive challenges are characterized by complexity, uniqueness, and ambiguity. They are often multifaceted, confusing, and hard to define. It is also hard to define the exact boundaries of a complex system, as outside context continually influences the system's results.

If you consider the difference in complexity between the system contained within the body of your car and a nation's education system, you can see why complex systems are more difficult to put into a neat diagram. If your car stopped working, you might be able to download a manual or bring it to a shop where someone who understands the system can fix it. You wouldn't wonder how the current political situation or your recent argument with your family might have impacted the running of your car, as external context (aside from weather conditions and driver actions) do not generally impact the functioning of that system.

On the other hand, if a child is failing out of the school, no repair manual exists. The education system incorporates the moods, capacities, biases, needs, and relationships of many people (students, parents, teachers, local gangs, etc.) as well as structural components like curriculum, teacher training centres, school infrastructure, and school location. Context external to the system, such as cultural norms about education, also highly impacts the way the system operates and its results.

This Guide is designed to help you explore the complex systems that look more like the education system than your car. While we will never be able to generate a 'user manual' for an education system in the cogent way that one might for a car, by using a systems practice and/or the tools in this Guide, you should be able to better understand a complex system and begin to see more opportunities for positive change.

In the Systems Practice course, instructor Rob Ricigliano of The Omidyar Group explains what types of problems are best addressed using systems thinking. Watch the video here[46].

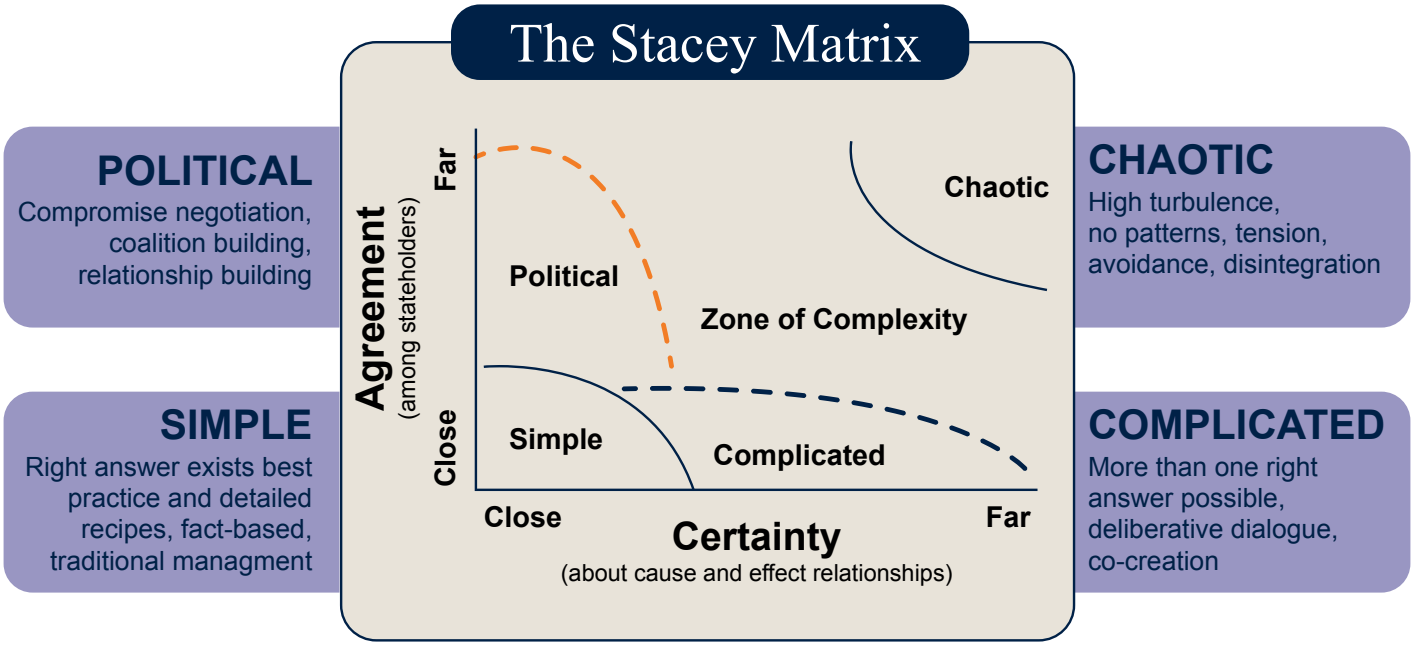
To determine whether the challenge – or challenges – you have in mind will fit the right complexity profile, you may benefit from completing this short exercise[47] with your group members. A similar exercise is described in the +Acumen course Complexity Spectrum Charts; we have included a high-level overview of this particular exercise below, but it is also available online with visuals here[48].

For this exercise, you will ask the following questions. For each one, draw a horizontal line on which to rate your challenge based on the criteria described:

- **Level of Understanding: how well is the challenge understood?** If the challenge and its solutions are very really well understood, put a mark on the left side of your line; if it is not well understood, put a mark on the right.
- **Engagement: how much consensus is there around a solution?** If there is consensus about how to solve the problem, put a mark on the left. If there is little consensus about how to address the challenge, put a mark on the right.
- **Environment: how connected is the challenge to volatile external environments?** If the challenge is self-contained and is not highly impacted by external environments, put a mark to the left. If the challenge is highly influenced by an external environment which is politically, socially, or economically unstable, place a mark to the right.

If most of your markers are on the left side of the spectrum, your challenge may not be a complex challenge, and as such may not be the right fit for this mapping process.

For more on simple vs. complicated vs. complex challenges, refer to a tool called the Stacey Matrix[49] (see diagram, also called the Certainty & Agreement Matrix).



Adapted from Stacey, R. Strategic Management Organizational Dynamics: The Challenge of Complexity. 3rd Edition. Harlow: Prentice Hall, 2002.

THE VALUE OF LIVED EXPERIENCE

A systems-change story arising from lived expertise:

Child abuse, whether physical, sexual, or emotional, is not only a horrific crime in itself, but also leads to substance abuse, challenges to mental and physical health, chronic disease, and other challenges later in life. Sheldon Kennedy was a star ice hockey player in the 1990s. He played for the Detroit Red Wings, Boston Bruins, and Calgary Flames in the National Hockey League (NHL). In the late 1990s, Kennedy courageously went public about his own experience with abuse as a young hockey player at the hands of a now-convicted sexual predator. His story led to other revelations, with other players going public, and the spotlight was turned on bullying, harassment, and abuse in minor sport. Kennedy, motivated by his own lived experience and the empowerment that followed his public storytelling, leveraged his public persona into asking tough questions about the system that child victims of sexual or physical abuse enter, and how it is stacked against them in so many ways – against speedy, empathetic assessment and against effective treatment, healing, and justice. He applied a systems analysis over several years that included public policy shifts, critical examinations of service and professional practice norms, and the creation of a Childhood Advocacy Centre[50] that now bears his name. The Centre houses nearly 100 professionals, including local and federal police, health professionals, child and youth workers, counsellors, educators, and crown prosecutors, who work together to assess, treat, and seek legal intervention and remedies for the children. Among many other innovations, the Centre has reduced the number of victim statements from a traumatizing six in the old system to one in the new system. This child-centred model is being replicated in many other cities.

One of the motivations behind launching **Map the System** was to **honour the value of lived experience and help those who don't have lived expertise on a topic find ways to learn more about it and hopefully contribute to positive change**. Baljeet Sandhu, author of a report titled 'The Value of Lived Experience in Social Change'[51] defines 'lived experience' as 'The experience(s) of people on whom a social issue, or combination of issues, has had a direct impact'[52]. Her report explores the value of lived expertise. For example, one who has been homeless and has seen the inner workings of the homeless support systems (or lack thereof) has expert knowledge of how those systems work in certain areas. The value of this expertise is often overlooked, relegating people with lived expertise to focus groups, surveys, and 'beneficiary' interviews.

There is a distinct advantage to working on issues which you already deeply understand. That said, we all see a system from our own lens, and it's only by bringing in multiple perspectives that we can deepen our understanding of a challenge. For example, while Sheldon Kennedy deeply understood the cycle and failures of the support system for abused children from the perspective of a child going through that very system, he did not initially understand the the system from the view of lawyers, health professionals, or others. But by piecing together a range of views about why the system functions the way it does, we can increase our opportunity to identify leverage points for change.

If you are considering researching a topic in an area of the world you have never been or a topic area in which you have no networks, you are starting at a disadvantage and might be coming in with misaligned impressions of a 'problem'. If you or one of your team members has lived experience related to your chosen challenge, you will have the advantage of this expertise in your learning process. If you don't, then you will need to work harder to gain multiple perspectives on the issue in order to dig below the surface of the challenge.

We highly recommend and support Baljeet Sandhu's report and work on The Value of Lived Experience, noted previously, and include this section as a reminder to avoid the common social change pitfall of overlooking or undervaluing lived expertise.

TIPS FOR IDENTIFYING A CHALLENGE

If you are not yet sure which challenge or unmet opportunity you would like to research, here are some tips for narrowing in on your chosen topic.

Start with what you are passionate about. Choosing a topic that gets you fired up is likely to make the process much more interesting and fun. Ask

yourself, 'Where are my interests? Are there any topics I have been eager to learn more about? Is there an issue area I would like to dive into, and perhaps work in some day, which I could use this opportunity to explore?'

Do I want my scope to be local or global? You can pick an issue in your local community, or one that impacts people around the world. Picking a topic you are more familiar with, or one which impacts people in your local area, is a good place to start, as it means you will be more likely to find people to interview and learn from – but proximity to the problem is not a requirement. With all of this said, please keep this caution in mind:

> Courtney Martin, in an article entitled 'The Reductive Seduction of Other People's Problems'[53], reflects on the shadowy side of idealism: the dilemma that young people of privileged backgrounds and life circumstances encounter in creating a life of meaning where they naturally are attracted to solving problems that seem both urgent and readily solvable. Martin urges students who are tempted by helping other people overseas to 'fall in love with the longer-term prospect of staying home and facing systemic complexity head on. Or go if you must, but stay long enough, listen hard enough so that 'other people' become real people'[54].

Consider your access to knowledge on the subject. Ask yourself, 'Where do I have access to data and lived expertise?' The more you already know about a challenge, or the more access you have to those with lived expertise who might join you in this learning journey, the more likely you are to dig below the surface of the challenge.

Narrow it down. Once you have chosen your topic, begin to narrow it down; this could be around a region or demographic, or a particular manifestation of the problem. The topic you focus on should be wide enough in scope that you can interview and learn from a range of people working on the topic, but not so wide that it seems all-encompassing. For example, 'economic poverty in the Democratic Republic of Congo' would be too wide, because 'economic poverty' has too many root causes to explore in the timeline of this competition. You might start by mapping out some high level causes of economic poverty and then see which of those areas seem the most interesting or easiest to research, given your time frame and research access. If one of your team members is studying education, you might look at 'education challenges in refugee camps' in the region. In your report, you could still state that economic poverty alleviation is your key area of interest, and then explain why you decided to focus on this specific area of research as well as how it fits into the macro picture of economic poverty issue. In the previously introduced video, instructor Rob Ricigliano of The Omidyar Group explains how to

effectively put boundaries around (or narrow) your system. Watch the video here[55], or read the next section for more tips for narrowing down.

Think about time allocation. The best submissions will be thorough and describe gaps and opportunities in the current solutions landscape. After you begin your research, ensure that you can do a thorough analysis in the time available. If you can't, narrow your topic further!

Geographic specificity. While some problems are indeed universal, how they show up in different cultures and geographies can be nuanced. As such, we suggest you focus on a specific geography, ideally one where you have access to data or expertise to help direct your learning. In other words, while teen anxiety and depression may be rampant in many parts of the world, your research is likely to be more robust and useful if you choose a specific country or region of focus. You can still bring the data and learning from experiences in other countries into your research as comparison points, examples of alternate approaches to solutions, etc.

Think about any ethical considerations. As part of your research, we encourage you to conduct in-person interviews or surveys with those who deeply understand your chosen challenge. If you intend to do this, you will want to consider any ethical implications this may have and find out if you need ethical approval from your institution. As most **Map the System** participants are not doing PhD level research and do not have research supervision, we suggest you avoid jumping into interviews with those currently living the experience of your chosen challenge if there are complicated power dynamics, or if you are only just beginning to learn about a topic. In other words, if you are researching homelessness in your home area but it is not on area where you have a deep understanding or strong existing networks, we suggest you focus your in-person interviews on those people who work in the sector: homeless shelter employees, government officials focused on the topic, aid workers employed in the sector, etc. As you are deciding your area of research, you therefore want to consider the ethical implications of your research and what those implications might have on the type of research you conduct. If you want to be interviewing people, then perhaps focus on an issue impacting you and your peers, your neighbors, or a demographic in which you already have close ties and deep understanding, and where conducting such research and using people's time feels ethically sound. The **Map the System** team has a page on the website about the ethical implications of this research. View this page[56] for their most up to date reflections.

AVOIDING A 'SOLUTION IN DISGUISE'

Once you have agreed on a general topic area, review your challenge statement. If the statement for the challenge includes a proposed solution in the statement, review it again, and rephrase it. You do not want your challenge to include a hidden assumed solution. For example, if the challenge statement you currently have is 'Getting clean hand washing stations into schools', your challenge statement is actually an assumed solution in disguise. You are assuming that the barrier to a bigger problem – perhaps the spread of diseases in schools – is that hand washing stations need to be put into schools. If you stuck with this 'solution in disguise' as your challenge statement, you might get into the weeds of the logistics of hand washing station sales and delivery, when the real the challenge you want to look at is disease spreading or creating a culture of cleanliness, or perhaps something else! By choosing the root challenge, rather than the proposed solution, in this case perhaps 'Spread of diseases in XYZ school districts', you will be more likely to explore the wider system, including a range of factors beyond hand washing stations like cultural stigmas around hand washing, political power structures of change processes and budget allocations in schools, etc.

NARROWING YOUR TOPIC

5 Whys

If you are not sure if you want to focus on a certain topic, write down the name of the challenge and then ask yourself, 'Why does this challenge exist?' Write your answer, or assumption, down. Then ask the question again, at least five times. For example, if your initial topic of consideration was 'the lack of professional clothing for ex-incarcerated people who recently came out of jail', doing the 5 Whys process might take you into areas of unequal education access, racial profiling in the justice system, lack of access to sustainable jobs, job training for low educated populations, etc.

As you go through these processes, make mental or physical notes about any assumptions you are making and what questions those assumptions bring up. If you hear yourself saying, 'I think so?' or, 'I think this might be related to that...?' you can start to write those assumptions down in the form of questions which might help drive your initial research questions or interviews with experts in the field.

If you are working in a team, you might each do this in silence and have each person explain their thinking to the group. In doing so, you might find that you have begun to map out a series of related challenges. Some

challenges might feel focused on symptoms rather than root causes or feel very tactical (the 'lack of professional clothing' challenge), and some might feel too complex to explore deeply in a short time without strong background knowledge (deep historical racial tensions across a region).

There is no 'right' level from which you are meant to be evaluating a systemic problem. It is fine to work on any level of the problem – from the problem of racial profiling in the justice system to access to jobs for the formerly incarcerated. Once you choose a topic, it will be useful to capture your learning process as you may want to illustrate your understanding of how this topic is related to other challenges and why you chose to focus where you did in your final report. Your reasoning for choosing your challenge can be as simple as the interests and experience of the group, your access to reliable data, or the fact that you realised through this research that this one component of the system seemed to be overlooked and, in focusing on it, you might find ways to link it to the efforts of those working on related challenges.

In other words, while the mapping process should aim for objectivity (though, of course, you will always be seeing the issue through your personal lens), your decision about a key focus area can be subjective. If you are more interested in the justice system than the education system, go ahead and explore the justice system! You don't need to find the topic area you think is 'most important', but rather the one you are most motivated to learn about. Your motivation, coupled with access to research leads in the area, will likely produce the richest learning experience.

ACTIONS:

- Decide on your challenge topic and geographic area of focus. You know you have the right fit when your team is satisfied that you have landed on a topic that is of interest, you all agree that the challenge has the right level of complexity, and you have some leads in the sector to begin your research. You don't need to feel 'married' to the challenge phrasing right now. As you continue on in your research process, you might find that you want to tweak it
- Review your challenge statement to make sure it's not a 'solution in disguise,' and rephrase it if it is.
- Do the 5 Whys process and Complexity Spectrum Charts, as previously discussed.

Individual or Team?

Photo by Fisher Studios courtesy of Skoll Centre for Social Entrepreneurship, Saïd Business School

While there are advantages to working as a team, if you are someone who enjoys researching alone, or if you're interested in a unique topic that others have not expressed interest in, it is perfectly acceptable to do this work on your own. In fact, a number of the past global finalists have been solo entrants. These have typically been people with deep knowledge about an issue area who want to take their research further and who are very interested in their chosen topic. If, however, you think you would like to be on a team, we've made a list of tips and considerations for you to think about:

CONSIDERATIONS IN BUILDING A TEAM

- **Topic of interest.** Is there a topic that links you to others, or one you can rally others around?
- **Balance.** Consider who on your team could bring different skills, experience, or perspectives which would be relevant to your project, such as knowledge of research skills, graphic design, complex systems, sociology, behaviour change, politics, etc.
- **Time commitment.** Is each member willing and able to contribute to the end of the competition? Some teams may want to dig deeply into this project, setting aside a few meeting sessions per week to share their learning. Establishing shared agreements on what level of commitment you are looking for may help in team formation and expectation setting.
- **Growth.** Are there learning opportunities for each member?

TIPS FOR FORMING A TEAM

1. Reach out to classmates and friends.
2. Make a short presentation in class to share your involvement and search for teammates.
3. Connect with clubs or groups where you are a member or that are relevant to your issue area.
4. Ask your professors or campus **Map the System** representatives if they know other potential team members. Remember, **Map the System** eligibility criteria state that only one member of the team needs to be a current student or recent graduate from your institution. Your other teammates can be anyone else. For example, if you are researching an issue relevant to senior citizens, you are welcome to invite a senior onto your team or someone who has deep experience working with that population (regardless of whether or not they are current students or alumni). The caveat to keep in mind is that **Map the System** expects all team members to fully participate in the process if shortlisted for local, national, or Global Finals. If the person is not able to participate fully in the process, we would recommend that you involve that person in a different way, for example, through interviews and research, and cite them as a source or an advisor as you develop your presentation, rather than having them as a team member.

This diagram is a very basic representation of some of the 'puzzle pieces' you may want to consider in forming your team. Again, one or two people may possess all of these skills, or if you don't have them all, you may be willing to stretch yourself to work on an underdeveloped trait. The important point is that diversity, interdisciplinarity, and complementary skill sets are a strength.

Note: We will write the rest of the Guide with team related phrasing, such as phases like "You and your teammates might consider…" We are doing that for consistency reasons, not because we want to bias you towards working in a team. If you have decided that working solo is the right thing for you, go for it!

ACTIONS:

- If you are looking to form a team, reach out to others to let them know your interests.
- If your **Map the System** university administrator has already organized a networking event to help people form teams, join it! If not, consider organizing your own event. Give each person who comes one minute and one slide with which to either present their chosen challenge or share their skills and interests, and then allow for matchmaking. As these events can feel rushed, we suggest having some sort of post-event electronic matchmaking platform as well, perhaps a Google Doc where people can share their name, their challenge interest or skills, and contact details.
- Finalize your team, or decide to work solo!

Research & Interview Tips

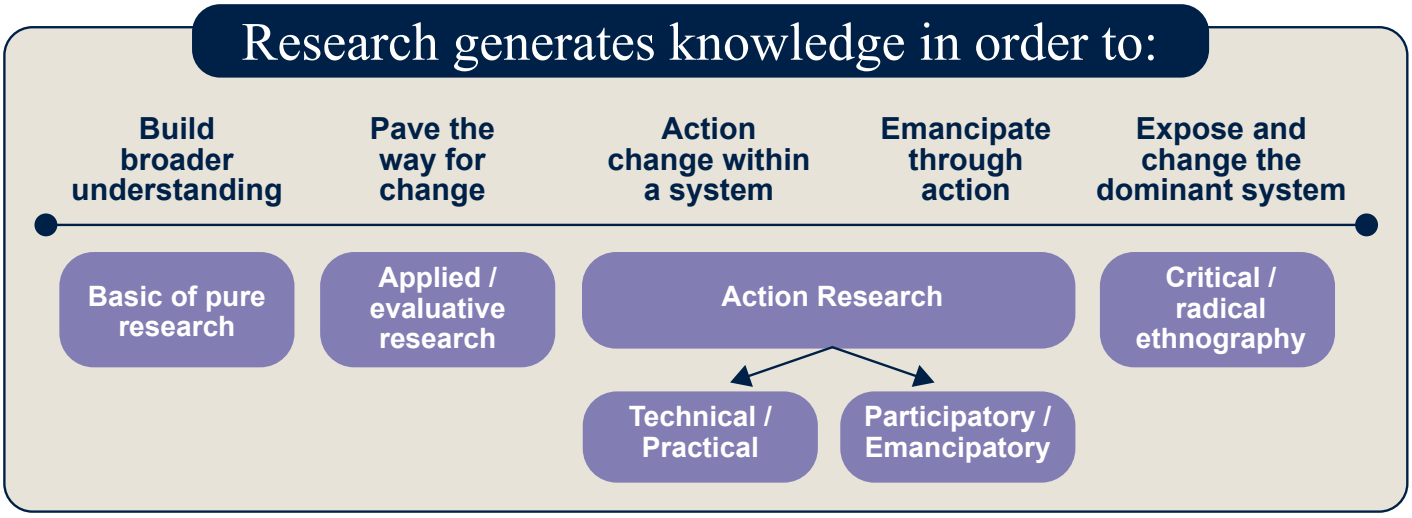
Research is essential to **Map the System**, and participants are likely to have varying levels of comfort and experience with this process. Some students may be very experienced researchers, such as master's or doctoral students, or may have participated in research fellowships or honours programs where they were trained in research methods. Students with strong academic research experience will likely find it easy to begin the **Map the System** process, but may want to take extra steps to ensure their writing and presentation style is accessible outside of academic circles. Less experienced students take heart: deep research experience is not an inherent advantage, as disciplinary-bound academic research can be as much of a liability as an asset with this kind of systems-focused process. For students with very little research experience, this section will help, but there is no substitute for connecting with a trusted faculty guide or mentor or asking your library staff for assistance. Many campus libraries or student support services will offer research bootcamps or intensives that are well worth taking.

There are many different kinds of research and scholarship. Ernest Boyer's model of scholarship talks about four domains of research:

- Discovery (What is true?);
- Teaching (What is valuable for learning?);
- Integration (What is good?); and
- Application (What is practical?)[57].

Map the System research is mainly in the last two realms, but draws on the others. It crosses disciplinary lines to collaboratively approach societal problems and questions (Integration), and looks for ways to cross the academic-practitioner (or community) divide to put knowledge into action in the world (Application).

Zina O'Leary, an Australian scholar and a leading thinker in the application of research to evidence-based decision making, outlines in the diagram below how research fits into understanding, exposing, and changing dominant systems:[58]



Adapted from: O'Leary, Zina. The Essential Guide to Doing Your Research Project. London: SAGE Publications, 2017.

RESEARCH TIPS FOR SYSTEMS MAPPING

Use a diversity of literature sources. The best submissions are those that draw upon a diverse range of sources and materials, including academic journal articles from a range of disciplines, government statistics, statutes, regulations and policy documents, NGO- or foundation-commissioned research, industry or think tank reports, citizen science or participatory research, podcasts, documentaries, 'thoughtleader' speeches or professional interviews, op-eds and/or news posts. More and more, governments, scholars, corporations, non-profits, and others are making their publications freely accessible online. And because it's easy for anyone to publish anything on the web, it's more important than ever to know how to evaluate the reliability and credibility of what you read and view. The University of Maryland has a useful one-page guide[59] to determining the validity of evidence – i.e. what is a 'good source' – but there are many similar guides that go into much more detail.

Balance quantitative and qualitative approaches. While your systems analysis is much more than data, data can be a powerful and necessary tool. Numbers can also be an important storytelling tool, particularly when they are graphically represented. It is important to consider and incorporate 'big data' when available. It is also vital to use 'thick data' – the everyday experience of those living the system based on ethnographic studies, biographies, etc. The service design organisation InWithForward[60] has some useful information on using ethnography, a set of techniques used in anthropology. One example of where thick data is critical is in cultural use mapping of lands where Indigenous people are the users and occupants. For example, they rely heavily on layered 'map biographies'

– nuanced understandings of how and where individuals hunt, harvest, and engage in spiritual practices. Others have taken similar approaches to mapping the lives of street-involved youth or seniors struggling to maintain independence.

Seek first-person perspectives. While it is not likely that you will have the time or support in the scope of this competition to undertake primary data gathering sufficient for academic publication, it is worth looking beyond books and articles to seek out first-hand perspectives from practitioners or other experts with deep knowledge of your chosen challenge. In your initial research gathering, you might make assumptions or draw some initial conclusions which an expert in the field can help you validate or rebuild. Perhaps you have a friend or contact who works in the field you are researching who would be willing to hop on a call or point you in the right direction with your initial research questions. Conducting interviews and including first-person perspectives in your presentation will add a level of verification and richness that brings the storytelling to life. (Review the next section for tips on interviewing.) However, conducting interviews, even if not for academically publishable work, may trigger the need for ethics approval through your institution, as the methodology needs to be carefully designed, especially if you intend to speak with vulnerable populations. For this reason, especially when it comes to the perspectives of vulnerable populations, we encourage you to seek out sources of first-person perspectives already gathered through other means (for example, biographies, profiles in the media, published academic research, etc.). Refer to the **Map the System** website on Ethics Considerations[61] and to your own campus' guidelines on research ethics. Additionally, Step 7 of this Guide – 'Considering Power' – will be useful to review in considering the value of first-person perspectives.

Look for the knowledge aggregators, mobilizers, and translators. Your systems challenge may be one that others are already looking at. To help you navigate where to 'drill down', rather than surveying a giant swath of academic literature, you may find a wealth of useful information through the channels outlined in the chart below. They can help illuminate potential blind-spots in your research and paint a more confident picture of the nature of the challenge and the effectiveness of various solutions:

Meta-analyses	Advanced research centres	*What Works* Centres	Public policy research aggregators	Academic journalism
Meta-analyses are academic articles that survey a broad swath of previous evidence-based studies, going back many years, around a particular challenge or topic. They typically combine statistical data to paint a more holistic picture of the evidence. When doing searches of academic articles, type 'meta-analysis' alongside your other search terms to find these studies.	Typically heavily-funded by national governments, advanced research centres engage top-tier researchers in complex, leading-edge questions.	In the UK, a series of What Works Centres[62] aim to improve the way government and other organisations create, share, and use high quality evidence for decision-making. Some are based at universities or colleges, while others are nonprofit think tanks.	Some governments and independent think tanks collect, evaluate, and aggregate findings from reams of prior research on social or environmental interventions to make evidence-based policy options more understandable for politicians and civil servants.	Some university-based researchers publish shorter, approachable summaries of their research in free online journals. These can be great places to start, as the articles reference, and are built on, academic works.
EXAMPLE: Meta-analysis of risk factors for suicidal thoughts and behaviours: 50-years of research [63]	EXAMPLES: RAND Corporation [64] CIFAR's 'Successful Societies' Initiative[65]	EXAMPLE: Centre for Aging Better[66], What Works Wellbeing[67]	EXAMPLE: Washington State Institute for Public Policy[68], based at Evergreen College	EXAMPLE: The Conversation[69] ('academic rigour with journalistic flair')

Below are some additional resources that have collections of content, from videos to news stories, relating to a range of social and environmental issues. While your chosen topic might or might not fit into these broader categories, it's worth doing a search to see if there is learning to be drawn from their pre-curated content.

- The Ballard Center at Brigham Young University has a fantastic new resource called the Ballard Brief[70]. Here, you can search for research reports on a range of topics, where gaps are identified and key learnings are summarized. Don't forget to look at the additional resources and footnotes tabs, as those provide links to other material on the topic.
- LearnGala[71] is a collection of cases, searchable by different sustainability issues. Run by the University of Michigan, this free platform could be a place to both find information for your research and post a future case based on your learning.
- Participant Media[72] produces high-budget films (fictionalized and documentary) that look at a wide variety of social issues. They also produce companion educational guides for some of the films.
- SIMA Classroom[73] is a carefully curated repository of international short documentary films searchable by social issue, UN Sustainable

Development Goal, etc. You can access the tool for a free seven-day trial to watch films and search learning content related to your chosen topic. All students of educational institutions that join **Map the System** are able to join SIMA Classroom for a 30% discount. Simply reach out to the SIMA team and use this code SIMA4MTS to receive this discount.

- SIMA RAMA Cinema Club[74]: **Map the System** participants can also get one year free access to SIMA RAMA Cinema Club, a global online film club streaming one award-winning social impact documentary each month, with panel discussions, podcasts, and action kits. The films are chosen by the annual Social Impact Media Awards from over 140 countries around the globe, delivering behind the scenes views of todays' global issues. You can use this link[75] along with this discount code SIMA4MAPstudent (case sensitive) to access your one year free membership
- Transformation Maps[76] is an effort by the World Economic Forum, searchable by topic, which might help you learn more about your chosen challenge and its global implications.
- Ashoka Fellows Database[77] houses a list of all of global Ashoka Fellows, searchable by topic and by geography. For more than 35 years, Ashoka has built and nurtured one of the largest networks of advanced social entrepreneurs in the world.
- The UN Sustainable Development Goals may relate to your topic in some way. The Brookings Institute[78] and the International Institute for Sustainable Development's UN SDG Knowledge Hub[79] both track progress on the goals.

Consider keeping a research journal. An online or handwritten research journal can be an effective way of managing your time and work. In your journal, track the databases you are using, the key words you are searching, and the questions you are generating. Take notes on the sources you find and use. Use icons or headers to organize the information.

Citations. Though our recommendation is the Harvard citation method, please use whatever citation style you are most comfortable with. When possible, include links so that your audience can navigate to the source themselves, and so you can support the future research of others interested in the topic. If you are inserting a chart or table borrowed from an external source in your presentation, please add a caption immediately next to it to show that it is from another source (for example, 'Source: Credit Suisse Global Wealth Report 2012'). Also provide a link to the report or include a full citation in your references section.

Confidentiality and anonymity. Be sure not to include confidential information in your submission (information that you are not permitted to disclose publicly). For example, you should not include information

provided in a private interview if the interviewee was not made aware that you are planning to publish the information, or has not given you permission to do so. You should also not include any personally identifiable information about your research participants, unless you have express permission to do so.

INTERVIEW TIPS

It is likely that most of the people you interview will be people whose jobs relate to your chosen sector: non-profit leaders, issue-specific grant makers, government officials, etc. Our interview tips here are based on an assumption that you are interviewing professionals working in the field. (Review the ethics section of this Guide for additional considerations regarding first-person interviews).

As you begin researching your chosen challenge, you may find that people you know have contacts with deep knowledge about the issue. If a professor, colleague, classmate, or anyone else offers to introduce you to their contact, you will want to honour that relationship and show up prepared for the interview. As such, it is perfectly acceptable to ask someone to delay an introduction if you do not think you are not yet in a position to put the time in to give the interview its due honour, or to respectfully decline if you feel the contact isn't the right fit for your research needs. If you do accept the introduction, here are our top tips for interview preparation and execution:

- **Honour the offer of their time.** There is nothing more frustrating for an educator than introducing a student to a professional who is an expert in the student's chosen field only to have the student not show up for the meeting or not do their homework in advance. This can damage their relationship with the professional, who might not accept an introduction to a future student. If you accept the offer of an introduction, honour it, and ideally that professional will walk away from the conversation with you eager to speak with other brilliant and well-prepared students!
- **Research the interviewee**, the organisation(s) they work for, and any writing or speaking they have available online. You don't want to go into the interview asking basic questions about them or their work which you could easily find out without using their time. Most people will be honoured to see you have done your homework and will be more willing to commit to an interview if it is clear that you have put the time in to make the interview valuable.
- **Send a well-organised introduction and request.** Some of the most frustrating emails to receive are those which go something like this: 'I read about your work and I am really interested in it. Can you tell me

more about it?' This message shows no sign that the person really has done their research, and it does not have a clear ask. In your email, let them know what you are working on (explain **Map the System** and/or your research), let them know why you specifically want to speak to THEM (show them that you have done your research about their work), and present a specific ask (such as, 'I'd love the chance to either interview you on a 30-minute phone call or send you three to five questions via email, as I believe you will be able to help us accelerate our learning on XYZ topic'.).

- **Let them know how you will use the information.** Explain **Map the System** or your current research goals and how the information you receive from them might be used. If you are planning to record the interview, ask them first. If you don't record the interview but you'd like to quote them, we suggest you offer to send them any potential quotes you might use after the conversation via email so they can either approve them or edit them as they see fit.
- **Prepare your key questions.** You may have a long list of dozens of questions you want to know about the topic, but as it is unlikely that you will get through such a list (and since you also want to allow for the serendipity of the interview going in a useful direction which you might not have planned for), highlight the two or three questions or topic areas you want to focus on and bring those with you into the interview. Remember to prepare open questions when you are trying to understand someone's feelings and experience and closed questions when you are seeking specifics.
- **Set time expectations** and stick to them. Show up to the call or meeting early. If for some reason you are going to be late or need to cancel, do so as far in advance as possible, and email or call to let them know your situation. Only cancel a scheduled call when you absolutely must, and if you do, show the utmost respect and sincerity with your apology, allowing the other party to set the time for a follow up if they are willing. If you invited them to a 30-minute interview, honour the interviewee's time by allowing them to exit the call or meeting at the agreed time. (If the conversation seems to be flowing, you can always say 'I want to honour your time. I recognise that we had originally agreed to a 30-minute chat, in which case we only have about five minutes left. Should I quickly ask my last question, or do you have time to stick around a little longer?')
- **Don't be afraid of silence.** Some interviewers rush from one question to the next, but sometimes the best information comes if you give someone time to think.
- **Ask for further research opportunities.** Before you close, ask your interviewee if there is anyone else they think you should speak with who might be a valuable resource on the topic and/or any related research that they recommend you review.

- **Thank the person for their time.** You should of course do that in the interview itself, but should also consider sending a follow up email (or a card, if you really want to impress). When you are done with your research, it is nice to follow up at the end again, thanking them for their time, and showing them that their time was valuable by sharing all or part of your research results with them.
- **Capture your learning.** Perhaps you recorded the interview or took notes during the process. Either way, you will want to summarize the interview and review the conversation soon afterwards to ensure you captured the key learnings or quotes. Write down the date of the call or meeting, the location, and the interviewee's name so that you can add the interview to your biography, if they are willing to be mentioned there. (If not, you can list the meeting anonymously, for example, as 'Interview with a fundraising director of a non-profit in a related field'.)
- **Follow up.** If you committed to following up by sharing any resources or contacts with your interviewee, honour your commitment. If you said you would run any quotes by them before including them in your write-up, follow up. If you said you would share your final research results with them, do!

ACTIONS:

- Check out some of the prior links to databases which might be useful in your research.

DIGGING DEEPER:

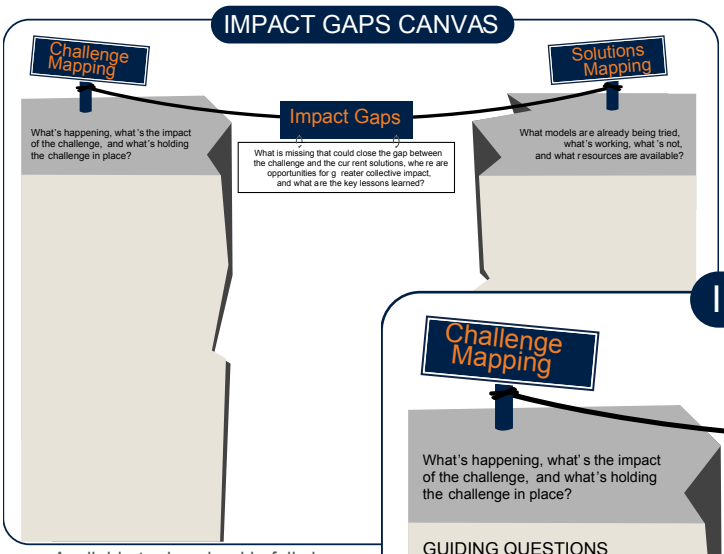
If research is new to you, check out some of this additional reading on research tools and methods:

- Access Alliance Multicultural Health and Community Services (2013) Everyone Can Do Research Toolkit[80]. Toronto.
- Bryman, A. (2012) Social Research Methods: Student Researcher's Toolkit[81]. Oxford University Press.
- Cryer, P. (2006) *The Research Student's Guide to Success.* Buckingham: Open University Press.
- Edson, M.C., Buckle Henning, P., O'Leary, Z. (2014) *The Essential Guide to Doing Your Research Project.* London: SAGE Publications.
- Quinn Patton, M. and Cochran, M. (2002) 'A Guide to Using Qualitative Research Methodology'[82]. Medecins Sans Frontieres.
- Sankaran, S. (Eds.) (2017) A Guide to Systems Research. Berlin: Springer.
- Whitehead, T.L. (2005) Basic Classical Ethnographic Research Methods[83]. The Cultural Systems Analysis Group, University of Maryland.

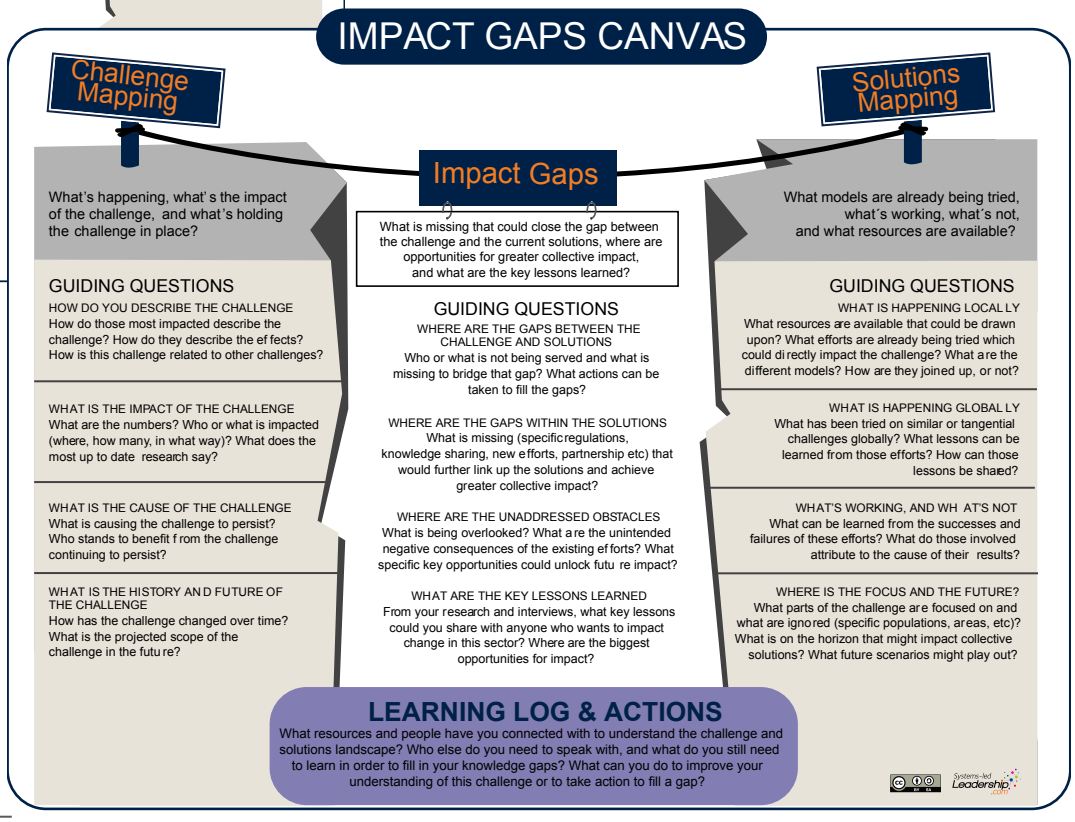
Understanding the Challenge

At a high level, participants in **Map the System** are asked to understand a challenge as well as the landscape of current solution efforts, and then identify opportunities for increased impact. This three-part process of understanding the challenge, solution efforts, and gaps mirrors the three parts of the Impact Gaps Canvas[84]. So, while there are many tactics and tools you could use to understand a challenge, we are going to introduce the Impact Gaps Canvas as a starting point for your research.

INTRODUCTION TO THE IMPACT GAPS CANVAS



Available to download in full size on www.systems-ledleadership.com



The Impact Gaps Canvas has three sections:

- **Challenge Mapping.** On the left, users are given a list of questions to help them understand a challenge within its complex context. This includes the history and future of the challenge, what is holding the challenge in place and who benefits from the current status quo, and associated data, causes, and impacts.
- **Solutions Mapping.** On the right, users are invited to learn about existing and prior solution efforts, such as what has already been tried, what models are in place both locally and globally, and what resources are available to support an improved network of solutions.
- **Impact Gaps.** In the centre, users are asked to analyse their learning and identify impact gaps. These would be overlooked areas that could provide opportunity for increased impact, like key lessons learned from other efforts and ideas for changes or new efforts which could link government, business, non-profit, or individual entities.

The Canvas was designed by Daniela Papi-Thornton based on what she calls 'common sense, but not common practice'. It's common sense that, before jumping in to solve a given challenge, anyone who wants to impact change should first want to understand the essential information related to that challenge (What is happening? What is causing it? What is the impact? What are the numbers?). They should also seek to understand what is already being tried (Who is already trying to solve this? Where resources are being deployed or overlooked? What's working, and what's not? What can be built upon or connected?). This tool is a very basic one, but it's designed to help us refine our common sense before jumping in to create change. A larger version of the canvas is available on the **Map the System** website[85].

CHALLENGE MAPPING VIA THE IMPACT GAPS CANVAS

When using the Canvas, start on the left side – with Challenge Mapping. The best way to start is individually, and then, as a group, brainstorm all of the questions you would need to know the answer to if you were omniscient about this challenge. If you knew *everything* there was to know about this challenge, what would you know?

For example, if you were interested in women's economic empowerment issues in a given location, you might want to know things like: 'What percent of women graduate from each level of school, and how does that compare to the percentage of men? Are the discrepancies different for various demographics or geographics? What is causing the discrepancies? How much do women earn compared to men for different

ages and demographics? What roles have more women than men, and visa versa? How has that changed historically? How are those roles viewed culturally? What laws govern, protect, or fail to protect women in ways that are different than how they govern or protect men? What are the cultural norms around working women? How do women feel about their economic empowerment? Are those feelings different for women of different roles/demographics/geographies?'

This is just a small list of questions from the many hundreds you could generate around this topic. Set a timer – perhaps for five to seeven minutes – and list as many questions as you can.

Once you've collected all of your questions, review them collectively, and ask yourselves these things:

- What questions are we missing? (Look at the left side of the Impact Gaps Canvas to see if the questions help you notice gaps in your thinking.)
- If *all* of this information was easily accessible, which answers would be the most and least important to have when getting an overview of this challenge? Why?
- Which questions could we likely find by Googling, reading research papers, or gathering existing publicly available information?
- Who might know the answers to some of the other questions or how to find them? Do we know anyone who might connect us to those resources?
- For answers we probably won't be able to find online or through existing research, what other proxy exists for finding insight into those questions? For example, while we might not be able to understand what *every* woman feels about their own – and their collective – economic empowerment, if the population of women under discussion was one with which we had close relationships, we might be able to interview a small group of them or see if other groups have done similar studies that we could review.

In doing this initial exercise as a group, you might notice some trends around your assumptions about 'problems', your areas of shared or diverging interests, and your areas of bias. Are there questions that you think you know the answers to, but don't have the facts and figures to back them up? What questions do you have no idea what the answer might be? Where do you have assumptions that you might need to push aside in an effort to be objective about your research?

Next, you might want to go through the Impact Gaps Canvas questions more systematically and divide up research tasks. Are there groups of

questions, from your brainstorm and/or the Canvas, that one person might want to take on as a first initial research project? Are there questions you have generated which might turn into a list of interview questions for a future conversation with a topic expert?

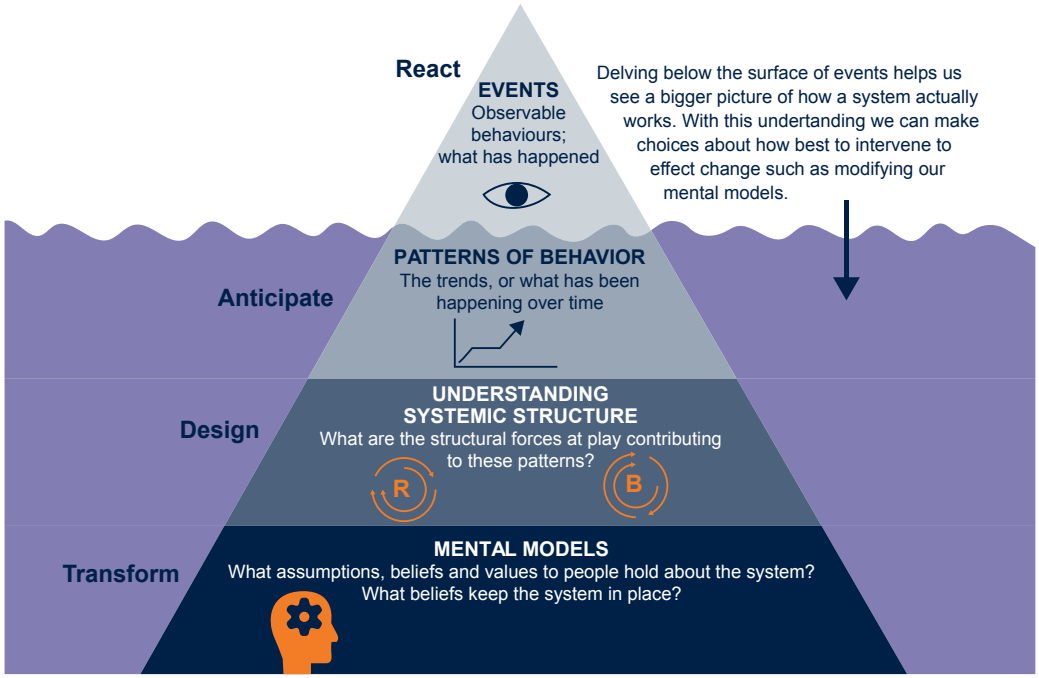
Take a look at past **Map the System** winners and finalists presentations[86] and submissions to learn more about how some students have successfully framed their challenge around the Impact Gaps Canvas.

EXPLORING ROOT CAUSES: THE ICEBERG MODEL AND THE CAUSES DIAGRAM

We previously introduced the 5 Whys exercise. Here are two other tools that may be of help in exploring and revealing root causes, and/or in presenting your learning about those root causes:

The Iceberg Model

The Iceberg Model is a core tool in any systems thinking toolbox. It uses the metaphor of the iceberg to illustrate the various layers at which a system exists. It provokes you to consider the underlying patterns, structures, and mental models. From above water, only a very small part of the iceberg can be seen. The same is true of systems. While some problematic events might be visible, they are usually only symptoms of larger problems below the surface: mental models (that is, values and beliefs) that produce problems at the deepest level, underlying structures that reinforce these mental models, and patterns and trends that emerge over time[87].



Adapted from Goodman, M. *The Iceberg Model*. Hopkinton, MA: Innovation Associates Organizational Learning, 2002; and Sweeny, L. and Meadows, D. *The Systems Thinking Playbook*. White River Junction, VT: Chelsea Green Publishing, 2010

In her 2018 winning **Map the System** entry on the opioid crisis in Canada, student Roisin Dillon used the Iceberg Model to reveal that, lying beneath an epidemic of fatal overdoses, there was an underlying pattern of overprescription. Underneath that, there was a structural relationship between the pharmaceutical companies and doctors that facilitated the overprescription as normal practice. And even further underneath that was a mental model that we must not tolerate any pain. Dillon noted that, in Canada, pain elimination – not pain reduction – has become the cultural norm and consumer expectation. Originally developed by Michael Goodman, the Iceberg Model has been adapted by many others, including in a well-explained format by the Northwest Earth Institute[88].

The Causes Diagram

Root cause analysis, historically used in IT service management to trace the causal chains of computer malfunctions, has been adapted to the social systems setting. The UK-based organisation Nesta has created a DIY Causes Diagram[89] that can help your team identify an array of possible underlying causes of a problem, rather than just the obvious ones. It requires you to start with the 'core problem', then to think about – and map – the direct symptoms, underlying symptoms, and contributing factors on the one hand, and on the other, the direct causes, underlying causes, and contributing factors. As such, the diagram can be a helpful tool in identifying gaps in the system, (which is covered in more depth in Step 9 of this Guide), and even in visually presenting your findings to a wider audience.

ACTIONS:

- Watch this short video on using the Causes Diagram[90] and/or download[91] and print the tool.
- Do the Impact Gaps Canvas[92] Challenge Mapping brainstorm activity described previously. Capture the data you already have as well as the research questions you would like to answer.
- Apply your challenge to the Northwest Earth Institute's Iceberg exercise[93]. This tool may or may not be valuable inyour analysis. If it is, consider including an iceberg-type diagram as part of your submission.
- Continue to check back in on, and add to, your master question list as you further your research.

Mapping a System

'You don't do a systems approach and then go back to how you did your work before. A systems map is a different artifact than a value chain analysis or some other strategy visualization. It gives you a whole different way of looking at the world. It's ideal if you're dealing with a problem that is dynamic and complex, where you can't just analyze it and assume A leads to B leads to C.'
Tom Glaisyer, Director, Democracy Fund, quoted in the Systems Practice course

While the Impact Gaps Canvas can guide you through questions about understanding the challenge, what it lacks is a focus on the relationships in a system. Once you understand the basic facts, figures, opinions, and drivers of a challenge, it's time to **Map the System** in a way that helps tell the story about relationships in a system and what is happening as a result of them.

If the idea of a 'systems map' makes you think of trillions of lines going in different directions and a mass (or mess!) of information, you're not alone. Even Ryan Mohr, Founder of Kumu, a very popular systems mapping software tool, says, 'Even as the cofounder and developer of a platform dedicated to systems thinking, I still find systems maps incredibly hard to understand'[94]. In his Medium post, 'Making Systems Mapping More Approachable'[95], he shares images of confusing systems maps and suggestions for how to simplify them. While some people traditionally viewed systems maps as being about mapping *all* of the available data or creating a complete model in order to replicate a system, Mohr says, 'We're no longer modeling systems, we're telling stories about systems to humans'[96]. His posts and perspective are relevant to the **Map the System** process, as the competition is not asking participants to do a complete model of a system. Instead, it's asking participants to use visual mapping and storytelling techniques to help visualise a system and cogently identify patterns and relationships which may reveal opportunities for increased impact.

In other words, you do not need to map *every* component of a system – only the ones which are relevant in telling the story related to your chosen area of focus. For example, if you are interested in the decreasing employability of high school graduates in a certain area, you might look at a number of systems – the education system, the economic and job market situation in the area, global economic systems and trends, etc. If you took a deep dive into the high school education system, you might focus on relationships between students, teachers, and parents, or cultural factors outside of the school system which impact students, such as gang or drug culture. It would likely be a waste of effort to try to depict the *whole* education system. For example, while in some cases the school nurses, janitors, or bus drivers might play or have the potential to play a significant role in understanding the decreasing employability of high school graduates in the area – in many areas – those roles in the education system are not a key part of the story.

You might find that you want to start with a more inclusive map, where you attempt to put in all of the system components. You might use the Kumu mapping software to do that, or some other tool – even a pen and a piece of paper.

For some useful resources in considering how to use mapping in telling the story of social impact, read and watch:

- Making systems more approachable[97]:
- Kumu system mapping software[98]:
- A systems approach to ending homelessness[99] (3:24-7:30 is especially relevant)
- If you are able to access it, view the documentary Poverty Inc.[100], which uses a great example of systems mapping to tell a story about the way international development has operated for much of the last century.

From there, your next step will be to pair down the system map to only include the relevant story for the challenge you are exploring, and for that process, we recommend the 5Rs model.

5Rs MODEL

For **Map the System** purposes, we use the 5R's model as a simple way to depict a system using these 5Rs: **Resources, Rules, Roles, Relationships, and Results**.

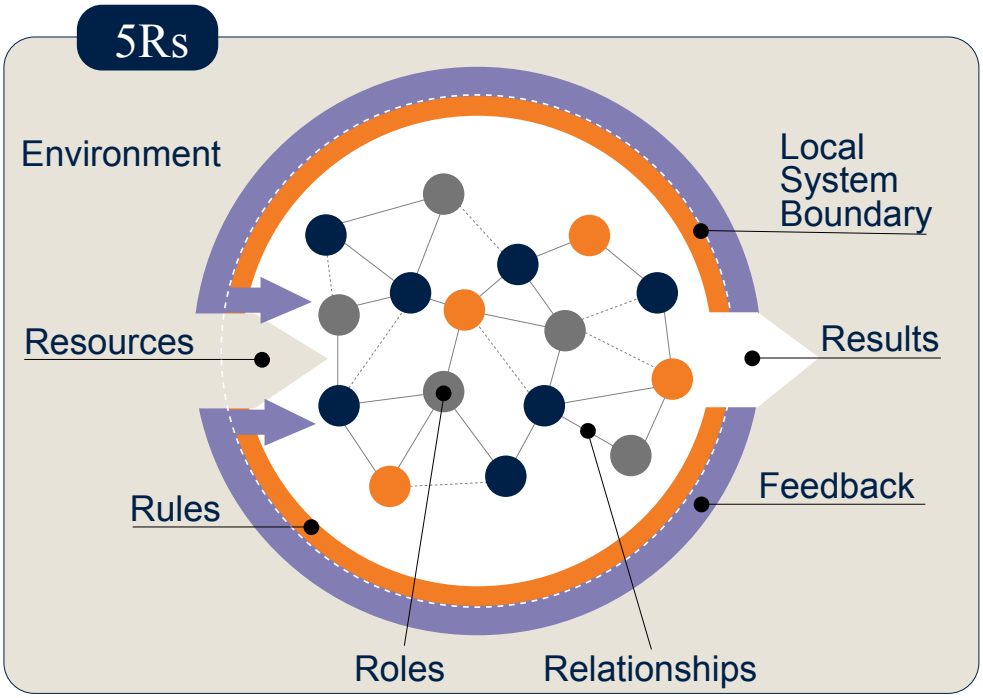
A publicly available technical note[101] from USAID explains how to use the 5Rs model. The first section (pages 3 through 8) is most relevant to the system mapping process, as the later part is about using this information in program design, which is outside of the scope of **Map the System**. You can read the full technical note online for more details, but we have included a high-level overview here.

Odin Mühlenbein, who runs Ashoka's Globalizer[102] program, an accelerator program for advanced social entrepreneurs, uses the 5Rs model in many of his workshops. He notes, **'50% of the work happens just in defining the title of the map: what system are your looking to map?'**[103] He encourages people to spend time thinking about the title, which puts a boundary around the system map, before jumping into the 5Rs. From having gone through the earlier parts of this Guide, you hopefully have already put in some time to understand which system it is you are mapping.

Once you have a title, it is best to next start mapping **Results,** even though it may seem counterintuitive. By choosing the results of a system to focus on first, you can then narrow down which other components you include

in your map, as they must then be the ones which contribute to achieving the mapped result. For example, if you are interested in understanding poor literacy results in an area, you would list the current literacy rates or other related results first. Before moving on to other components of the system, you will want to list additional results, as it's easy to fall into the trap of only focusing on one negative result. While literacy rates in that area might be low, perhaps there are other learning outcomes which have high results, or additional negative results (for example, in math and science). Perhaps some other possible results are that teachers get paid, certain demographics of students go on to further education, etc.

Now it's time to map the **Resources**, **Roles**, **Rules**, and **Relationships.**



Adapted from USAID. *Technical Note: The 5RS Framework in the Program Cycle* (Program Cycle Operational Policy ADS 201). USAID Bureau for Policy, Planning and Learning. Washington, DC: 2016.

Resources are the inputs of fuel that go into the system. These might be different funding streams, natural resources, or availability of human resources. In the education system, resources might include the supply of trained teachers, government funding or other financial resources, as well as the students themselves.

Roles and **Relationships** are a way of mapping the parts that different actors and organisations play in a system and the relationships between them. This process is different from actor mapping, as the goal is not to list each individual actor, but rather the roles that are played which contribute to your chosen results. In a system, there might be a number of different banks which play a number of different roles, but rather than listing each bank, you would list the different roles played. Some banks may play multiple roles. There might be roles for lending agents, secured

savings providers, and/or financial advisors. You could draw out the roles as different nodes in the system, where the relationships are the lines that connect them. While the USAID document does not get into this, you can further tell the story of a system by providing more narrative details about the relationships in the system which contribute to certain results. For example, the strength of the relationship between parents and teachers in the education system might be a leverage point for potential change, so describing the current strength and nature of that relationship might be an important part of mapping the system.

Rules can be the formal laws or policies which govern a system, but should also include the behavioural norms and expectations which drive decisions. In other words, there might be a law on the books that undocumented migrants are not able to receive formal education, but if that law is ignored by actors in the system, it is not really a 'rule'. Sometimes, cultural norms or expectations are stronger drivers of behaviours than laws, and identifying these often unwritten expectations is part of the rule mapping process. Rules in education systems might include: ways lessons are conducted (norms), curriculum (perhaps governed by the state), how teachers are trained and reviewed (which could be formal policies or norms), and/or the way classes operate (that is, norms that students always stay with the same teacher every year).

The USAID 5Rs Technical Note lists a range of guiding questions you might consider using when trying to understand how a system is functioning. Here is an adapted version of those questions:

Results

What is the target result that defines the system?

- Are there trends (increasing or decreasing) or patterns in the target result over time?
- How is the target result evaluated by local actors? How is it valued?
- What other results (positive or negative) does the system bring about?

Roles

- What roles are actors currently performing within the system?
- Are some roles being played by different types of actors, such as both the government and the private sector providing primary education?
- Are donors or other third parties playing prominent roles?
- How effectively are actors fulfilling the roles they have taken on?
- Are there issues of legitimacy or appropriateness surrounding the choice of roles that particular actors might take on?
- Are there any roles that seem to be absent? If so, why?

Relationships

- What types of relationships exist between actors (formal or informal, contractual, hierarchical, or reciprocal)?
- How strong are these relationships?
- How valued are these relationships? Are they collaborative? Mutually beneficial? Conflictual? Predatory?
- Does the strength of the relationship vary depending on the actors involved?
- Are there relationships identified as missing, weak, unnecessary, or illegitimate?

Rules

- What rules affect the way the system functions?
- Are the relevant rules formal (laws) or informal (norms)?
- Are relevant rules enforced? How well? Effectively? Equitably?
- Are actors in the system able to modify the rules that affect them?

Resources

- What resources are currently being used by the system in producing the target result? Are there necessary resource inflows that are missing or insufficient?
- Are there trends (increasing or decreasing) or patterns (cyclical) in resource inflows?
- What are the sources of those resources? Are they reliable and secure?
- How well are the results that the system is producing being translated into sustained resource inflows (through feedback loops)?

After running 5Rs workshops with countless groups, Odin Mühlenbein recommends looking out for these four common pitfalls:

- **Full Picture vs. Relevant Story**. You might be tempted to try to include all of the actors in a system. While there might be room for that in a larger system mapping exercise separate to the 5Rs, the value of the 5Rs model is that it requires you to focus on the key elements of a system which contribute to your chosen results.
- **Your Model vs. The System.** The 5Rs model is not intended to be used to help you pitch your idea for a system intervention – it's designed to map what is currently happening. In other words, keep your new ideas and interventions for change out of the system and instead focus on mapping what is currently happening and the current results.
- **All Bad vs. Appreciative Stance.** If you only look at what you think is not working in the system, you will miss the things that are, the people and organisations who benefit from it, and possibly things that might get in the way if you wanted to make a shift. Hence, look at the results you hope to see changed in the future, as well as the other results and positive attributes of the system, as those can hopefully be built upon and

leveraged. In Step 8 – Understanding the Solutions Landscape – you can read more about appreciative stances and identifying assets in a system.

If you want to read about the results of putting the 5Rs model into action at Ashoka Globalizer, read this article in the Stanford Social Innovation Review[104] or this document which captures the 'intended impact'[105] of past Globalizer participants. Note that the start of each intended impact statement captures the title of the specific system each of them are working with. For additional help on relationship mapping, download the FSG Guide to Developing Actor Maps[106].

TRANSITION THEORY

Another useful framework for understanding and depicting systems change is the Transition Theory model. The Finance Innovation Lab used this theory in their own analysis of the financial system and wrote about it very cogently in their report entitled 'The Finance Innovation Lab: A Strategy for Systems Change[107]', where they illustrate the Geels model[108]. Read their full report, if you want to understand the journey of an organisation founded with a systems change approach, but if you want to specifically learn about Transition Theory, refer to pages 28 and 29 for their brief overview of the model. Here is an even briefer one:

> **Transition Theory** looks at how systems change occurs through a combination of changes at these three levels: the landscape, the regime, and niches of innovation. 'Landscape' includes the broad trends in society upon which the system is set. It might include cultural norms, communal values, technological innovations, and demographic shifts. 'Regime' refers to the structures of power which contribute to how the system is shaped and controlled. It includes the policies, markets, infrastructure, and culture, often very set in their ways, which make up the structure of the system. 'Niches of Innovation' are the areas of new ideas, prototypes, and innovation which are being tried.

Shifts in the **Landscape** of a system, combined with new concepts in the **Niches of Innovation,** can shift a **Regime**. And changes in the **Regime** can help shift the landscape or incentivise new **Niches of Innovation**. By looking at these three levels, one can better understand the shifts happening in a system or possible levers for future change. Using Transition Theory will be useful in mapping what is happening in your chosen system, especially if your system is in flux.

Transition Theory bears some resemblance to the idea of 'The Adjacent Possible', popularized by science author Stephen Johnson in his book *Where Good Ideas Come From*: 'a kind of shadow future, hovering on the edges of the present state of things, a map of all the ways in which the present can reinvent itself…[the adjacent possible] captures both the limits and the creative potential of change and innovation'.[109] The theory of the Adjacent Possible requires that possibilities for change are available in the present (that is, the adjacent), not in some distant theoretical 'what-if' land. As such, the new system can only be revealed if combined with, or having emerged from, the old.

JOURNEY MAPPING

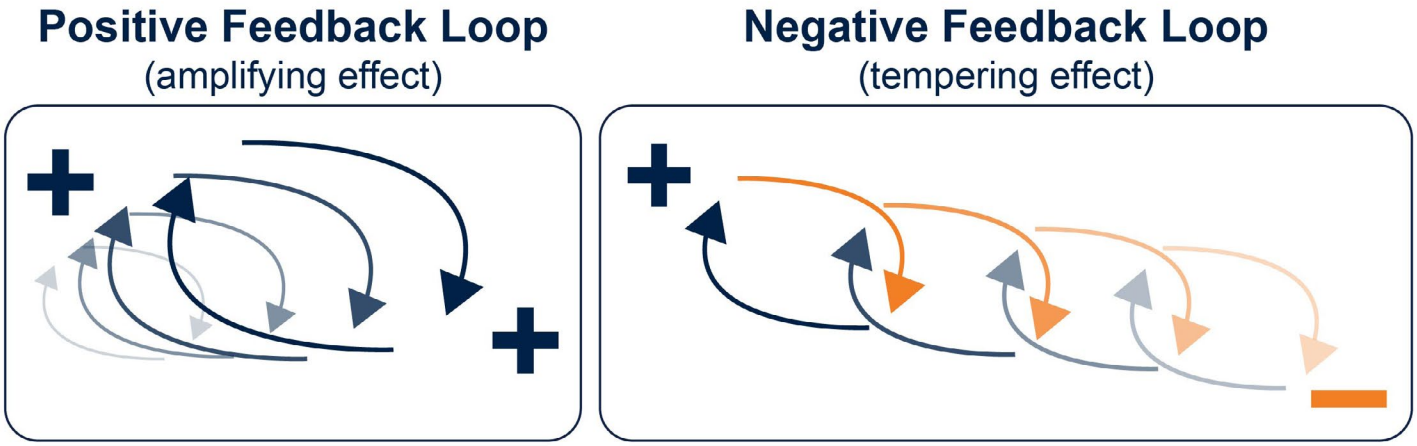
In marketing and retail research, a tool known as the 'customer journey map' is often used as a way of understanding, and visually representing, a consumer's encounter with a service environment – what's working and what's not. This has been adapted by health care systems to describe 'patient journeys'[110] and by some social service organisations to describe 'client journeys'. There are similarities to, and overlap with, ethnographic techniques and other tools used in 'human-centered design'[111] to design products and service models around users' actual needs, practices, preferences, and behaviours. The concept of a 'user' is one popularized in entrepreneurship discussions, as the term implies there is a product or service being offered which one would use. **Map the System**, of course, is not asking you to offer a solution, and therefore you would not be mapping the 'user journey' of your own product or service offerings, but there might be citizen users currently navigating challenges in current solution offerings whose journeys could be mapped. Journey maps can be a powerful way of telling the story of a system, at least from one perspective.

One **Map the System** finalist in 2017 used a stylized, data-weighted map to show the problematic journey – economically, geographically, and culturally – that one Indigenous community had to navigate to get food, both through traditional harvesting and through the modern retail system. There are other maps that mirror journey mapping, but with products at the centre rather than users. A supply chain, value chain, or waste journey map may be a useful tool, depending on your challenge.

FEEDBACK LOOPS

Many system maps also feature **causal loop diagrams**, which depict visually how different elements in a system are interrelated. Simply put, they are circular patterns of causation. Also called feedback loops[112], these

are widely referenced in engineering and in the natural sciences to show a chain of events, relationships, or actions that feed information (or some other phenomena) back into the system. Feedback loops can be 'positive', meaning the causal chain loops back to reinforce a pattern or force in the system, or they can be 'negative', meaning the loop diminishes, or keeps in check the original dynamic. Positive feedback loops result in an exponential curve, something increasing or decreasing at a higher and higher rate. Negative feedback loops look more like undulating curves, up and down, up and down, going just above and then just below and ideal stable state.



Despite their name, 'negative' feedback loops are typically a good thing, building in a self-regulating mechanism in a system intended to be sustainable. However, because of their stabilizing power, negative feedback loops can also act to prevent change in a stale-but-stable system. They may even reinforce dynamics of oppression and submission. Positive feedback loops, on the other hand, can produce runaway, out of control effects. This is the so-called 'vicious cycle'. Positive feedback loops can also be, well, 'positive' (at least for a short time), such as when social movements grow so powerful that they create a disruption to the current system, provoking a 'phase transition' where the system shifts to a new set of norms, patterns and even new feedback loops. The following table provides some examples of feedback loops relevant to social systems.

Systems can be interpreted in different ways, based partly on how we understand feedback loops. It was once assumed that the market system was self-regulating through negative feedback loops naturally stabilizing the system, but the balance of evidence suggests it is filled with *positive* feedback loops, and there has been a growing challenge from many economists[113], ecologists, and even some policymakers to figure out a viable 'steady-state' economic system where more of the feedback loops are 'negative,' or self-regulating.

Examples of Feedback Loops

	Negative Feedback Loop (tempering effect)	**Positive Feedback Loop** (amplifying effect)
Beneficial effects	SYSTEM STABILITY/BALANCE e.g. Natural ecosystems are filled with negative feedback loops, creating an overall 'balance' in a healthy ecosystem. Consider how daytime heating causes evaporation, causing a build-up of moisture-rich clouds, feeding back cooling rain to temper the effect of the original heating.	SOCIAL TRANSFORMATIONS e.g. Consider the #MeToo movement, for example, where a positive feedback loop of women coming forward, sharing their experiences of sexual assault or harassment, which empowered other women to come forward, ultimately creating a 'phase transition' – permanently altering social awareness and shared norms around consent.
Problematic effects	SYSTEM STAGNATION e.g. Rising, visible homelessness creates public pressure for the government to 'do something, and quick'. This leads to interventions that are lower cost, yet easily implementable and scalable, like temporary shelters. Shelters work to get people off the street, tempering the original dynamic, but they do not result in any 'phase transition', where people are permanently on a path to financial self-sufficiency or shelter empowerment. It's simply the regular, ongoing churn of on-the-street, off-the-street, back-on-the-street. ...or DOMINATION e.g. Indigenous organisations in many parts of the world increasing their activity and visibility in the international arena, causing their home governments to clamp down and demonise, shame, or even outlaw their activities (or worse, in some cases).	VICIOUS CYCLES e.g. Increased use of fossil-fuel powered air conditioning as global temperatures rise due to carbon emissions amplifies the original effect. In other words, we feel hot, so we use more air conditioning, which in turn makes the world hotter, and will cause even more use of air conditioning. The result is that one action feeds into the need for even more of that action, creating an exponential growth curve.

Think of the feedback loops in the system you are examining. What negative feedback loops are keeping the system either 'in check' or 'stuck', and what positive feedback loops might be throwing the system off-balance or holding the potential for disruptive change? The Waterloo Institute for Social Innovation and Resilience (WISIR) describes feedback loops[114] in a series of videos, alongside other systems description tools.

TIMELINE AND TREND MAPPING

It may be helpful to show how a system has emerged over time and/or the trajectory to which the system is headed (particularly if there are positive feedback loops keeping the system out of stasis). Climate-related challenges, for example, have an inescapable temporal component. FSG offers Guides to Timeline Mapping[115] and Trend Mapping[116]. Keep in mind, though, that maps like these aren't in themselves systems maps, but they may be useful and important adjuncts for telling the systems story.

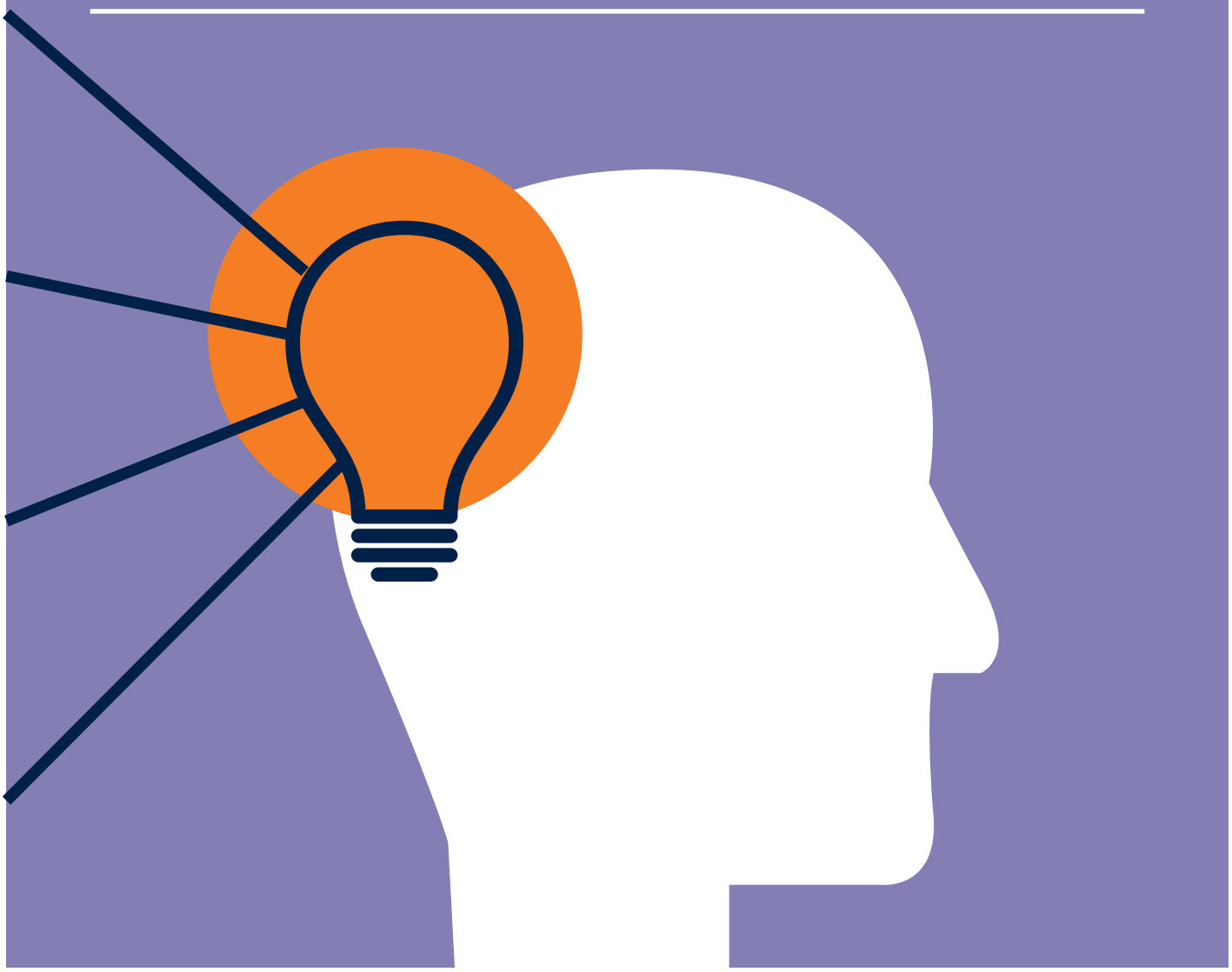
ACTIONS:

- Review the nine-part slide deck on FSG's Systems Thinking Matrix[117] which may help you determine what other kind of mapping may be useful to your challenge.
- Go through the 5R's Framework[118] exercise, described in this section.

DIGGING DEEPER:

- If you are interested in learning more about feedback loops, check out these four helpful resources:
- 'In A World of Systems'[119] by Donella Meadows
- Dan McCarthy, Director of WISIR[120], explains causal loop diagrams[121].
- 'Feedback loops'[122] by Rob Ricigliano, instructor of the The Omidyar Group as part of the Systems Practice course
- WISIR on feedback loops[123].

Understanding System Dynamics and Relationships



Considering Power

UNDERSTANDING POWER DYNAMICS

Whenever you are looking at a system and investigating root causes and underlying patterns and structures, it is almost inevitable that you will encounter power dynamics. Understanding power is a key systems thinking skill. **As you look for patterns that reveal how a current system works, make sure you ask questions about who benefits from the way things are, who does not, and who has the power to change that. How does the system maintain the status quo, and to benefit whom?** There may not be any malice behind the power dynamic. As Emile Durkheim observed long ago, people and social systems may be bound by what he called 'social facts' – 'manners of acting, thinking and feeling external to the individual, which are invested with a coercive power by virtue of which they exercise control[124]'. These social facts, which are really 'faux facts' – cultural norms, moral codes, beliefs, and shared assumptions – can be hard to spot precisely because they are everywhere, like the air we breathe and the water we drink. And while they may seem relatively benign, some may keep people in permanent, structural positions of supplication or disempowerment. Consider the 'social fact' of heterosexual normalcy (and its shadow, homosexual 'deviance') which continues to cloud many societies' ability to recognise and respect LGBTQ rights.

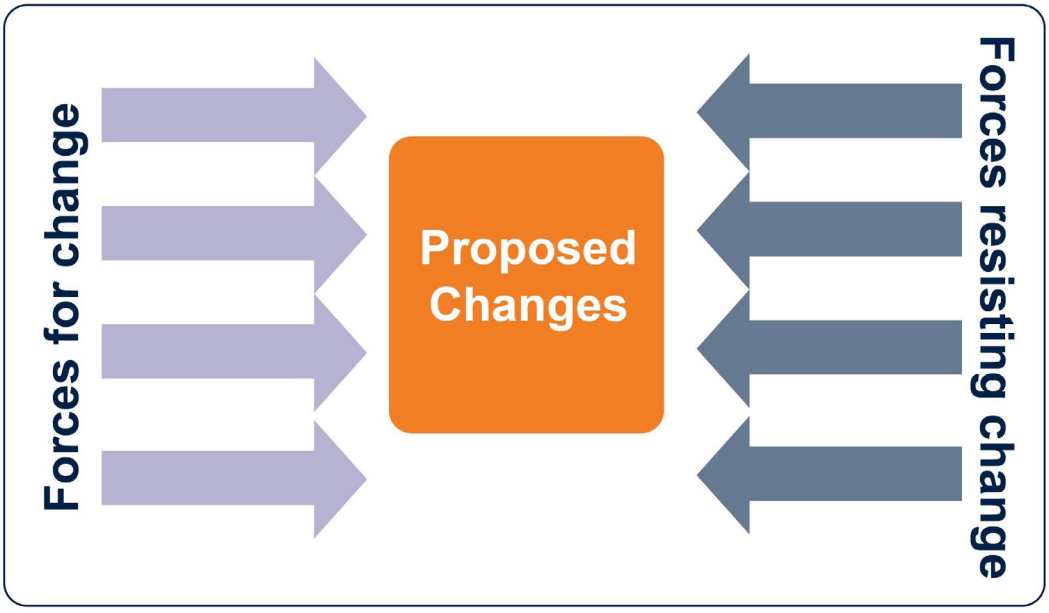
"Who benefits from the way things are, who does not, and who has the power to change that?"

Paulo Freire, an influential activist and educational reformer, talked about the importance of 'collective meaning making' to reveal the nature of a system that creates and maintains elites and inequitable societies. This collective meaning-making emerges from the life experiences of those living the issue or the challenge. This is why the **perspectives of those living in the system, and who are most disenfranchised by it, are essential for change – though their voices are often overlooked.** A decades-old systems analysis tool that may be helpful in understanding the nature of people's relationships is Sherry Arnstein's Ladder of Participation[125]. This tool allows you to map which 'rung(s)' of the ladder citizens are either encouraged or blocked from being involved in (with many shades in between, such as tokenism, placation, informing, etc.). You might use the tool, or another you find online, to map or evaluate how different actors in the system participate in decision making and influence a system. What would it look like to put more power or influence in the hands of those living the challenge? Where is that being tried? Can this be included in the solutions landscape you are exploring?

Understanding power dynamics related to your chosen challenge starts by asking questions about power and considering it in your analysis. Learning more will also require gathering perspectives from those with deep expertise in the challenge. There are various ways to involve and enhance your analysis with these first hand perspectives:

- As mentioned previously, you can involve one or more people who are 'living the challenge' on your team. For example, in the 2018 **Map the System**, the student team from Oxford University included a person (not currently enrolled in a post-secondary institution) living the issue they were speaking about: the gender-based employment equity gap in Utah.
- Engage in an ethnographic process – shadowing, observing, and engaging with people living the challenge. You may even take this one step further into participation, while being cognizant of your institution's research ethics policies and your own power dynamics in the process.
- Incorporate already published or publicly available second-hand interviews, biographies, stories, participatory action research, or other sources of lived experience perspectives on the issue. This is the most reasonable option if it is simply impractical, unreasonable, or unethical to solicit first-hand perspectives.

From there, you may want to create a power and influence map, or map out different actors in relation to how much power they have to change a system, versus how much the issue impacts them. There are many power mapping tools, such as this one from the University of Minnesota[126], created in partnership with Campus Compact.



Based on Lewin, Kurt. Defining the "Field at a Given Time", in Psychological Review. 50: 292-310, 1943. Republished in Resolving Social Conflicts & Field Theory in Social Science, Washington, D.C.: American Psychological Association, 1997.

Force Field Analysis

Another simple tool that you can use for thinking about power is 'force field analysis', developed by the social psychologist Kurt Lewin, and now used in everything from grassroots advocacy campaigns to corporate management.[127] Force field analysis entails two lists (as illustrated here): one outlining all parts of a system pushing for change, and the other showing those opposing or resisting change.

In much of the world, including many of the countries hosting schools that participate in **Map the System**, there is a legacy, and in many real ways a persistent presence, of colonialism. Indigenous peoples or displaced peoples are often at the short end of complex systems challenges. They are often land-poor and resource-poor, experience health and well-being challenges greater than most of the population, have more conflicts with the law and more challenges accessing capital, and are usually the first to experience the effects of climate change through drought, natural disasters, and melting permafrost – to name just a few examples. Some countries have histories of slavery, racial tension, and ongoing racial biases. At the same time, the leverage points can be profound. The colonizing or oppressive nature of many modern societies, and the colonized mental models that accompany this, are among the deepest realms of structural inequity and among the most difficult to shift. **The need for inclusion of local, authentic voices in any such challenge analysis is critical. As the adage goes, *nothing about us without us.***

ACTIONS

- Review the Powercube[128] tool, a resource for understanding power relations in social change efforts.
- Review this Youth Voice Rubric[129] developed by the Freechild Institute and consider how citizens and other groups in your system represent certain levels in terms of voice and power.
- Look for power analysis tools in your own country that illuminate lost histories of dispossession and disenfranchisement. In Canada, for example, there is the Kairos Blanket Exercise[130].

Solution Landscape

8
Solutions Landscape

'If a factory is torn down but the rationality which produced it is left standing, then that rationality will simply produce another factory. If a revolution destroys a government, but the systematic patterns of thought that produced that government are left intact, then those patterns will repeat themselves... there's so much talk about the system. And so little understanding.'
- Robert Pirsig, from Zen and the Art of Motorcycle Maintenance: An Inquiry Into Values (1974)

You have already taken time to understand the challenge: the facts and opinions, what is holding the problem in place, the power structures, the impact, and other facets. Now, it's time to look at what solution efforts are being tried. To be clear, in this section, **you are not being asked to come up with *your* solutions.** Rather, you are being asked to identify the solution efforts which have already been tried, or resources available which could contribute towards a collective solution in the future.

The right-hand side of the Impact Gaps Canvas provides some initial starting questions for your exploration. We recommend you start by looking at the local solutions landscape, and then explore what is being tried globally.

Locally, you might ask questions along these lines:

- What efforts are being tried to ameliorate the problem?
  - Who is leading them and what models are they using?
  - What government, non-profit, corporate, or citizen-led efforts have previously existed, or now currently exist?
- Are there collective efforts?
  - What networks exist related to this issue?
- What policies have been tried?
- What knowledge, data collection, or research has or is being conducted which relates to this issue?
- What role has the media played in sharing information about this issue?
- What do local government officials think about this issue?
  - What departments are focused on this?
  - What is the size of the workforce dedicated to this challenge, compared with other issues?
- What resources are available locally which might not currently consider themselves part of the 'solution' efforts for this problem, but which target a similar demographic, issue area, or social group, and whose resources might be available in the future?
- What research has been done about these efforts?
- Where does the funding for these efforts seem to be coming from? Etc.

When you expand to look **globally**, you might also ask questions like:

- What other organisations, governments, educators, or activists have tried to work on this issue in other areas of the world?
    - What models have they used?
- Which of the UN Sustainable Development Goals (SDGs) does this challenge fit into, and who is tracking progress in those areas?
- Are there any tangential issues or efforts which can be learned from?
- Are there any global research initiatives focused on efforts to solve this problem in other areas?
- Which places have had the biggest positive or negative changes with regards to this challenge, and why?
- Where has funding, political will, media exposure, and community or corporate will spurred from in those cases? Etc.

Once you have started to map out a list of efforts being tried, you can try to expand your questions by pretending you have the CEO, government official, or local leader on the phone who is part of the team spearheading the efforts you have identified. Pretend they have vowed to answer any question you ask! What questions would you have for that person? **The questions you might gather for future interviews or research** might include things like:

- How did you start this work?
- What efforts and/or models did you try before settling on your current trajectory?
- What part of your model seems to be working best? What doesn't seem to be working?
- Who else is doing work which contributes to, benefits from, or restricts your work?
- What is the leading research on this issue that you refer to in designing your work?
- How do you see your work, or the need for your work, changing in the future?
- What efforts would help increase the impact of your work?
- Who do you collaborate and compete with?
- How do you fund this work?
- Who is most (and least) appreciative and supportive of your work?
- If you could go back in time to when you started this work, what key lessons would you share with yourself?
- What else do I need to know about this challenge and the efforts being tried to solve it? Etc.

Once you have started to answer these questions and collected enough information to analyse, you can start asking questions about **what is working and what is not**, such as:

- What does the research say about these efforts?
    - Have there been any large studies, PhD papers, randomised control trials, books, reports, or other data showing the impact of any of these efforts?
- Which efforts seem to be the most effective?
    - Why do those seem to be working better than others? (You might look at what geographies they are in, their target populations, the models used, the way collective efforts or partnerships are leveraged, how data is used and shared, etc.)
- What efforts do not seem to be effective?
    - Why?
    - Are some of those efforts being repeated over and over, even though they seem to deliver subpar results?
    - Why?
- Where are the efforts focused?
    - What cultural, geographic, economic, government, or other incentives might have contributed to why these efforts are favored? (For example, is there a non-profit or government fund which is promoting or supporting certain models?)
- Who or what is being ignored or overlooked?
    - What cultural, geographic, economic, government, or other barriers might have contributed to why these efforts are less favored? (For example, is the local religion preventing certain health interventions from spreading?)
- Where does the opinion of the general population, government, local leadership, etc. seem to differ from what seems to be the reality of the situation? (For example, while many travelers and international donors seem to favor donating to and supporting orphanages rather than foster programs, global studies have shown that family-based care solutions are a better first choice for child livelihood outcomes.)
- What resources are available which seem to be underutilized in terms of their ability to contribute to change? Etc.

Finally, you might look at **what is on the horizon**:

- What theories exist for future solution efforts, new policy, new organisations, etc. which might come into play in the future?
- What changes to existing organisations seem to be on the horizon?
- Are there any collaborations, collective efforts, new funding, new research, or new policies on the horizon?
- What resources or populations are available and seem poised for incorporation into the solution efforts? Etc.

This line of questioning will overlap with and lead into the next section: identifying gaps and levers of change. We'll get to that next, but for now, let's consider additional ways you can explore or present your learning from examining these solution efforts.

Asset Mapping & Appreciative Inquiry

As noted during the exploration of the 5Rs exercise, once you see a system that is broken or failing people in serious ways, it is common to overlook the positive attributes within a system. Remember that a system 'shift' lies in the adjacent possible, where some (though not all) existing system elements (people, institutions, etc.) are bound to be involved in some way. Even a revolution can only shift things to an adjacent possible. Nearly all systems have assets that can be built upon when scanning for future solutions. Some of these are active and easy to spot, while others are latent – they lie dormant as potential, underutilized assets. Examples of latent assets include large numbers of unemployed or underemployed people. Ashoka Fellow Shaun Loney describes this well in his book An Army of Problem Solvers[131], where, in one story, Indigenous communities with 80% unemployment living with monopolized, expensive, low quality food conditions become assets as growers, value-add producers, and community-based retailers in the creation of a new community-controlled healthy food production. Loney is a big fan of social enterprise as part of the solution space, as described here his Tedx Talk, 'How Social Enterprise Can Solve our Most Costly Problems'[132], which gives an overview of how he encourages others to see assets within fractured, colonial systems.

Asset mapping is typically used in the context of neighbourhood-based community development, but there is no reason why the tool could not be adapted as part of scanning the solutions landscape. Americorps' Vista Campus has a guide to asset mapping[133]. Assets are sometimes referred to as forms of 'capital'– natural capital, social capital, built capital, and so on – and many institutions have developed frameworks for supporting these. One example from the UK is The Five Capitals[134] model developed by the Forum for the Future, convened by Keele University. Keep in mind the role of people as capital, not in an exploitive way, but in terms of power, voice, participation, and lived experience as mentioned in other sections.

While it may not be realistic in the scope of **Map the System** to undertake a true asset mapping exercise, the tool may be helpful as a frame. Another framework we want to introduce, for those of you who are interested in taking this work into action in social justice initiatives, is 'appreciative inquiry'. Participatory approaches, such as appreciative inquiry, are ways to help identify, engage, and build on latent community leadership and other assets. It is a process that involves discovery, imagination, and design based on identifying strengths, dreaming possibilities, and engaging communities in designing local solutions. There are many useful tools available from the Appreciative Inquiry Commons[135], hosted by the David L. Cooperrider Center for Appreciative Inquiry at Champlain College in partnership with Case Western Reserve University's Weatherhead

School of Management. This interview and guide[136] by FSG outlines how appreciative inquiry is useful in systems thinking.

Once again, these tools are not likely to be ones you use directly in your **Map the System** research, but we included them because you might be able to identify related efforts by others who have already used these tools and whose work you can learn from. Or, otherwise, you might use the tools in your future social change work.

Evidence & Innovation

Most powerful of all, what are the solutions that have some weight of evidence behind them? Do we have a sense of 'what works' (and, equally important, what hasn't worked), based on the research that others have done? In addition to the research aggregators, mobilizers, and translators outlined under the earlier **Research Tips** chapter, you may also want to look at social innovation, policy innovation, or sustainability innovation portals, clearinghouses, think tanks, and institutes. The following is only a small sampling of some of the hundreds of such organisations globally:

- Africa Centre for Evidence[137] - Based at the University of Johannesburg, this centre aims to reduce poverty and inequality in Africa by increasing the production and application of research evidence that is both useful and used.
- Atlas of Social Innovation[138] - Hosted by the Technische Universität Dortmund in Germany and gathers intelligence on the diversity, breadth, and useability of social innovations in different parts of the world.
- Canada's EcoFiscal Commission[139] - Hosted by McGill University in Montreal and provides economics research and evidence-based recommendations for climate, carbon pricing, energ, and water conservation policy.
- Canada's Evidence Institutions[140] - Hosted by the Mowat Centre at the University of Toronto, this crowdsourced tool highlights centres of evidence with accessible, quality research aimed at informing social decision-making.
- Centre for Evidence and Implementation[141] - Based in Singapore, Sydney, and Melbourne, this organisation connects the best evidence in practice and policy to improve the lives of children, families, and communities through systems, service, and behaviour shifts.
- ESADE[142] - A social innovation institute at Ramon Llull University in Madrid that has produced a worldwide overview/inventory of 'social labs'[143] working on complex challenges.
- European Centre for Social Welfare Policy and Research[144] - A UN-affiliated intergovernmental body that provides comparative research on welfare, health, care, labour, ageing, and social inclusion policies and experiments.

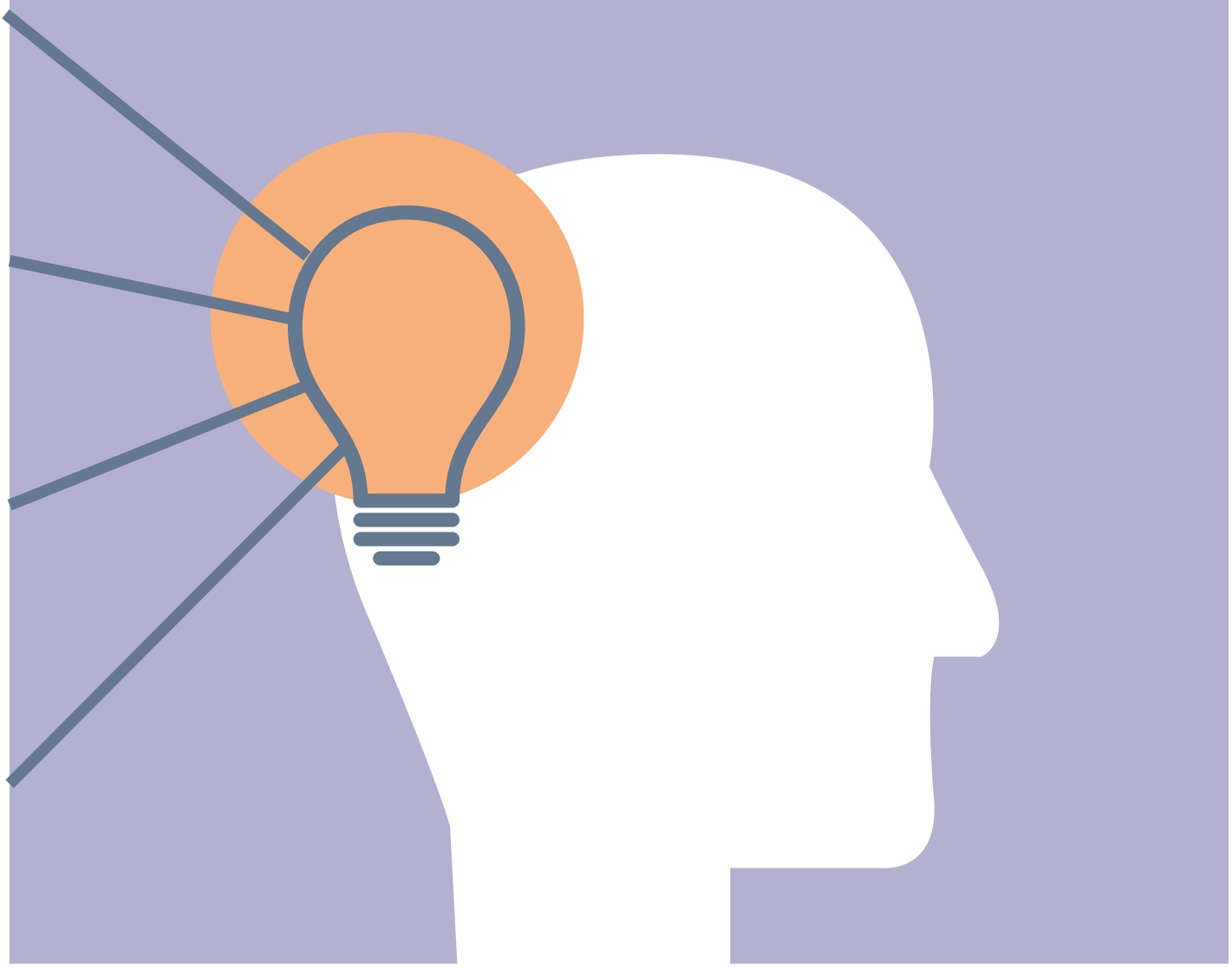
- Global Alliance for the Future of Food[145] - Consortium of foundations that develops research and tools based on systems perspectives.
- International Development Research Centre[146] - With offices in Ottawa, New Delhi, Amman, Nairobi, and Montevideo, IDRC funds and disseminates funds research in developing countries to promote growth, reduce poverty, and drive large-scale change.
- Maytree[147] - Toronto-based foundation focused on social welfare, economic poverty, human rights, and inclusion policies and practices.
- Nesta[148] - UK-based innovation foundation looking at big issues in education, culture, health, and public sector innovation.
- One Planet Network[149] - One of the UN SDG 'hubs', it focuses on sustainable production and consumption.
- Pew Results-First Clearinghouse Database[150] - Rates the effectiveness of and evidence base for hundreds of programs in areas such as behavioural health, criminal justice, education, and public health.
- SolutionsU[151] - An effort of the Solutions Journalism Network that serves as a repository of articles that are solution focused.
- Stanford Social Innovation Review[152] - Large database of articles searchable by issue, sector, or solution type.
- Results for America[153] - Designed to help government decision-makers and nonprofit practitioners harness the power of evidence and data to solve social challenges.
- TACSI[154] - The Australian Centre for Social Innovation works on systems shifts in a variety of areas.
- UpSocial[155] - Barcelona-based global consultancy investigates and ranks social ventures and interventions based on level of innovation, scalability, and strength of evidence.
- What Works Network[156] - UK government-supported network of centres intended to improve the way government and other organisations create, share, and use high-quality evidence for decision-making.

Some of the above resources also explore models for change at a more 'meta' level – that is, what do we know about how change happens? If you are generally interested in understanding more about how systems change, the lessons learned by such thinkers as Adam Kahane[157] of REOS, Leslie Crutchfield[158] of FSG, and Duncan Green[159] of Oxfam are also instructive in considering how change happens. Their work explores systems change at the meta level: how systems shift and how solution-adoption can happen through effective collaboration, movements, and analysis of power relations. If you are specifically interested in social entrepreneurship and how some social entrepreneurs have been able to expand beyond the silo of their own organisation to contribute to changing wider systems, then read 'Beyond Organizational Scale: How Social Entrepreneurs Create Systems Change'[160] by the Schwab Foundation and the Bertha Centre for Social Innovation & Entrepreneurship at the University of Cape Town.

ACTIONS:

- Using the right side of the Impact Gaps Canvas and the questions listed at the start of this section, generate your own list of questions necessary to explore the solutions landscape of your chosen challenge.
- Go out and start researching so you can begin to answer as many of those questions as possible, and turn some of them into interview questions if you have the opportunity for first-person research.
- Scan to see if any of the research bodies listed previously is particularly relevant for your area of interest, and if so, dig in!
- Consider of the Asset Mapping resources linked previously will be useful in your analysis.
- Watch this 2-minute video on 'Appreciative Inquiry'[161] by Sharon Jones-Eversley at Towson University.

Identifying Impact Gaps and Levers of Change



Impact Gaps & Levers of Change

"Folks who do systems analysis have a great belief in 'leverage points'. These are places within a complex system where a small shift in one thing can produce big changes in everything".
– Donella Meadows

The **Map the System** evaluation rubric emphasizes the importance of clearly describing the **impact gaps** and possible **levers of change** you identify when presenting your system analysis. Once you have a sense of the nature and dimensions of the challenge you are focusing on, and the array of solutions either already being tried or potentially available, a clearer picture will start to form of the gaps in the system. Now it is time to analyse what you have learned about the challenge, and the efforts already being tried to solve it, in order to identify what is missing that might make the system healthier.

IMPACT GAPS

Impact gaps are overlooked areas, missing interventions, or opportunities for increased learning and positive change. Gaps, also called fail points, can take many forms: fractured service delivery, lack of communication or collaboration between key players, lack of political will, an inability to understand user perspectives, severe power imbalances, perverse incentives, missing research, conflicts of interest, and countless other manifestations. To consider these, you might ask yourself these types of questions (some of which are highlighted in the centre portion of the Impact Gaps Canvas):

- Where are the areas or populations that the current interventions are overlooking? How might they be reached?
- Based on your research of similar global challenges, which successful efforts were tried elsewhere which might be adapted to the current context? What key lessons should be learned from those past efforts when considering replication, and how might they need to be adjusted given the nature of the challenge in your chosen geography?
- Are there knowledge sharing gaps, movement building opportunities, or underutilized resources which could be filled or taken advantage of? If so, what examples and lessons learned, based on your research, could be considered?

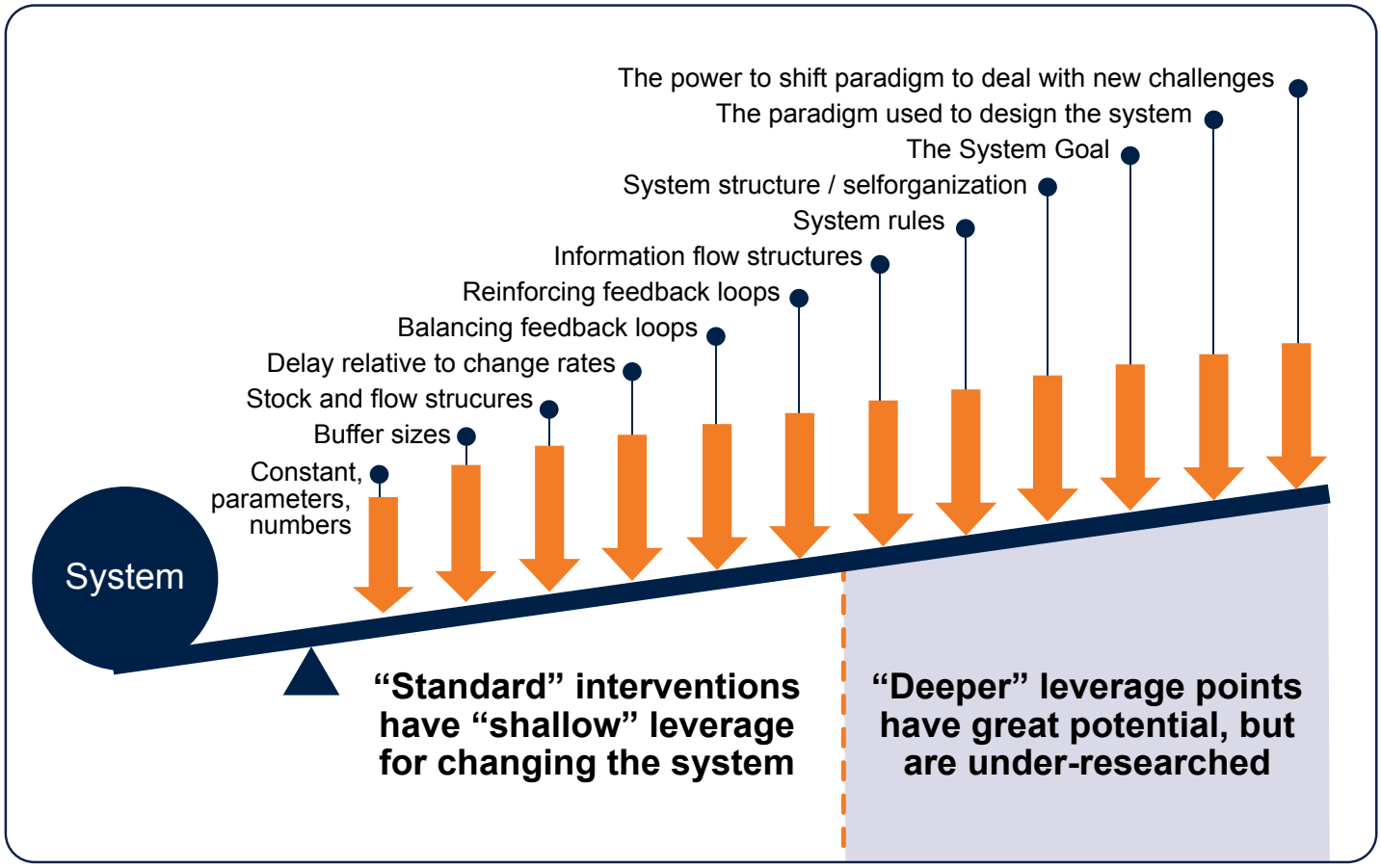
- Where are unintended negative consequences mitigating the positive impact of current interventions? What did your research show that might be considered in increasing the impact of current efforts?
- Where is further research needed which could contribute to the impact of the collective? Or where is research available, yet not acted upon, which could be distributed further or in a more compelling way?
- Overall, based on your research, where are the biggest opportunities for increased impact across government, non-profits, the corporate sector, movements, educational institutions, and/or researchers or other groups whose efforts might contribute to landscape of solutions?

Make sure you explain the gaps in enough detail that you can demonstrate an understanding of what it might actually take to help solve the challenge, or what others have tried that has worked in other areas. For example, it's not enough to say that nonprofits or government departments need to work more closely together. Of course they do – they always do. *How* should they work together? Maybe it's through, for example, client data-sharing protocols, which you have seen working elsewhere? (And what might an example of this be?) Or maybe it's through a co-located hub and spoke model? Or perhaps there's opportunity to revamp the funding or financing model? Etc. The most important point here is that you should demonstrate that you have a convincing, authentic sense of a range of gaps: what's missing, why, and where the opportunities lie for addressing these gaps. If you propose an idea for how to fill a gap, it's best to back the idea up with your research: we noticed A and B seem to be working, but C hasn't been tried; based on our research of what was tried in Z location and the current cultural biases in the area, we believe C might be successful if implemented in D way.

LEVERS OF CHANGE

Levers of change are another way to look at opportunities for increased impact. The late systems theorist Donella Meadows called these 'leverage points': those features of a system that can have a powerful effect on altering the system, or large portions of it. In her article 'Leverage Points: Places to intervene in a system'[162], she walks through different types of leverage points, from changing the 'rules' of a system (such as incentive or punishment structures) to changing the parameters (such as taxes or standards). We *highly* recommend you read this Donella Meadows piece, as reading through her list and considering how the system related to your chosen challenge might shift given the use of different leverage points may help you identify those you want to highlight in your report. In fact, if you are, or are becoming, a systems enthusiast, we recommend you read Donella Meadows entire book on the subject, Thinking in Systems[163].

In general, the deeper you dive, past the practices and underlying patterns, policies, structures and mental models of the system (remembering the *Iceberg Model*), the more powerful the levers become. When people's mental models are altered en masse – including their values, goals and beliefs – then a tsunami of change becomes possible. We witnessed this, for example, in much of the western world over the last two decades with respect to LGBTQ rights, or during the 1970s with respect to domestic violence.



Adapted from Meadows, Donella. *Thinking in Systems: A Primer*. White River Junction, VT: Chelsea Green Publishing, 2008.

Meadows further notes that if you do discover a system's deep leverage points, there's a chance that very few people will believe they are worth pursuing. While Meadows identifies them as deeper leverage points, if you jump straight into suggesting a shift in mental models, the leverage point may seem so exotic or otherworldly that it may be hard to get buy-in or traction. For example, we know that economic growth (or, more to the point, zero- or low-growth) is a leverage point with respect to most profound ecological challenges. But the cultural appetite and institutional push-back that a no-growth agenda entails, at least for the time being at, puts it out of reach as an easily actionable response. Such deep leverage points are still well worth surfacing and including in your submission, but you should also try and identify 'actionable responses' that might help move towards that larger shift. For example, simply saying, 'To save our planet, we need

to shift from a “growth is good” mindset to a “zero- or low-growth is good” mindset’ might indeed be highlighting a shift that would address the climate challenge, but that is like jumping from A to Z. How can we get there? You could actually focus your whole research project on how a system might make such a shift, if and where such a shift has happened in the past, and the micro-steps needed to get there. So while those deep leverage points are worth pointing out, they will only be viewed as positive contributions to the discourse about the challenge if they are backed up by evidence from your research as to how others have made similar shifts, or ideas for the steps to move through a longer-term change process.

It is perfectly acceptable, and expected, that you might identify a range of leverage points. These might include changes in regulations, laws, organisational practices (communication, collaboration, or others), public information, etc. Some might be shallower or more practical ideas where something small could be piloted, prototyped, or scaled. Others, like mindset shifts, might be more complicated and need further explanation into the ‘how’ of implementation. You might list an array of impact gaps and possible leverage points for change and then dig into just a few of them with further ideas and research as to how those might be implemented. We recommend that you include information about why you decided to dig deeper into the ones you selected (and it’s perfectly acceptable to explain that those happened to be your areas of interest).

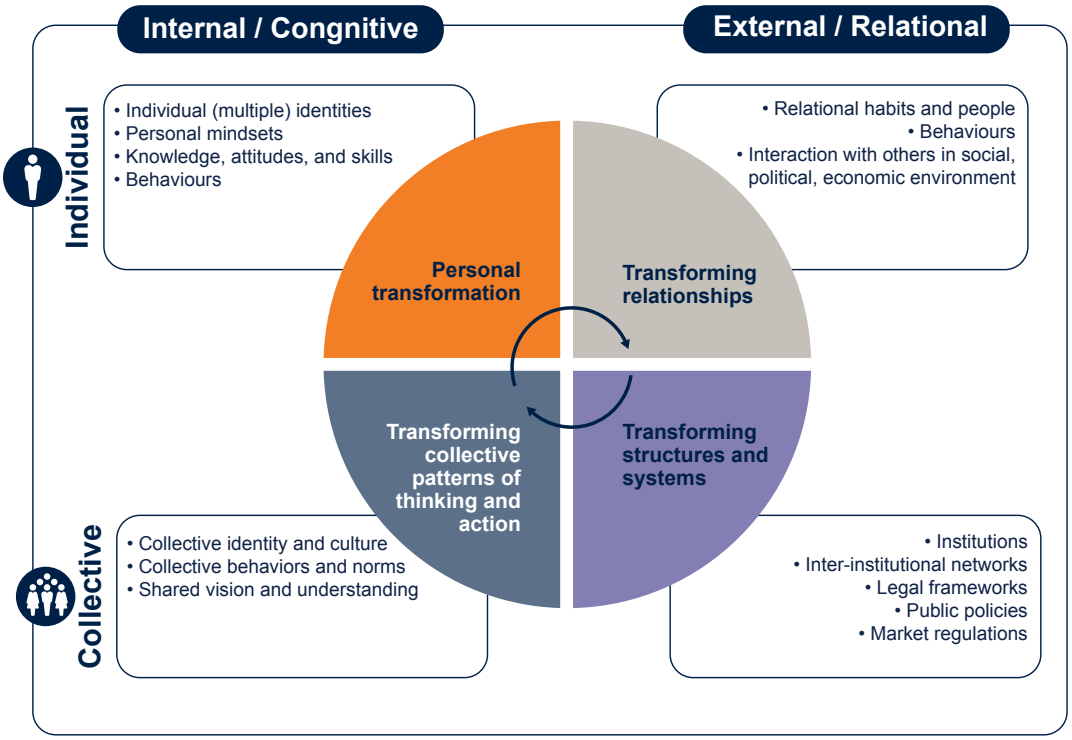
While identifying leverage points can seem exhilarating, and given we all want to find ways to shift broken systems, Donella Meadows’ piece warns us that leverage points can often work counterintuitively: they can have the opposite effect of what is expected. A famous example she noted is subsidized housing projects intensifying the negative effects of poverty rather than solving poverty. Another more recent example is ‘scared straight’ programs, which are designed to reduce recidivism of first time young offenders, though studies show such programs actually *increase* the chance of re-offending[164].

The introduction section of the +Acumen course on Systems Practice includes a video of Rob Ricigliano[165] describing an intervention which went exponentially in the wrong direction. A development organisation was looking to decrease overfishing off the island of Kiribati. They noted that the two major sources of income generation were through coconut harvesting and fishing, so they decided to increase the incentives and decrease the barriers for coconut productions. By helping people increase coconut sales and gain improved market opportunities, they hoped they would be diverting energy away from fishing and into the coconut industry. Instead, people were able to make significantly more money, and therefore could afford better fishing boats and gear which

increased their fishing harvests. Some found that that they could make money more quickly through coconut production, so they now had more free time to fish. The intervention had certainly backfired. If your research has uncovered similarly disruptive interventions, you might want to also include these in your report to highlight the lessons learned and patterns that should be avoided.

Other Concepts to Consider

A similar concept to leverage points is the notion of 'keystone species', used in ecology to connote species – typically apex predators – that serve to keep the ecosystem functioning, sometimes counterintuitively. The reintroduction of wolves[166] to the Yellowstone ecosystem helped bring back other species, cascading through the food web, helped native plant life flourish, and even stabilized the ecosystem's rivers. Although it's a logical fallacy to simply transfer lessons from the natural world to the social world, there do appear to be individuals and organisations that function like keystone species within social systems. Without them as the keystone, the entire 'arch' can collapse. They may be hard to spot, as they may not be the ones with the most press or glory, but you may be able to identify them through triangulation: if everyone is pointing to the same organisation or individual, then they may be the keystone in the system. The inverse of a keystone species is also powerful – an ill-conceived 'solution' that intervenes in a way that might look positive at first, but can actually cascade into the collapse of a system. Famously, DDT is one such example, chronicled well in this video on 'Cats in Borneo'[167]. By the way, not all systems have 'keystones', but all systems do have leverage points.



Based on a 2014 adaptation by Isabel Vogel of ITAD of Retolaza, Iñigo. *Theory of Change. A thinking-action approach to navigate in the complexity of social change processes*. Panama City: UNDP/Hivos, 2011.

Another helpful model to think about gaps and levers of change is illustrated in this diagram – The Four Dimensions of Change[168] – developed by Robbie Gregorowski and Mel Punton from the UK-based development consultancy Itad. Which of the examples under each dimension might hold clues as to where your gaps and levers of change may be within the system you are mapping?

Mistakes to Avoid

Based on reviewing dozens of past **Map the System** entries ourselves, we know that identifying gaps and levers of change are areas where many entries lose the most points. Avoid these common pitfalls if you want to produce a top entry:

- **Selling 'your' solution idea**. We have read a number of reports where people do a decent job of exploring a challenge and mapping out the efforts already being tried, but then they essentially say, 'We have looked at the challenge and solutions landscape and the only thing we can see missing is *our* new venture idea!' Not only is this egotistical, it's unrealistic, and in fact, impossible. There *must* be other interventions possible, from government action to activism or behaviour change interventions, and if you use your report space to sell one new venture idea, you certainly will be missing the point of this exercise.

- **Focusing on only one gap.** We certainly understand that one idea, perhaps a new policy change idea, might surface as a very compelling intervention. Include it, and even go into detail about how you think the political will to make it happen could be fostered, or any other such deep exploration of the possible implementation, but then also include other gaps. We recommend you list out a number of gaps, and then dig into a few of them more deeply if you can, explaining why you chose to further explore the ideas in question.

- **Not backing up your ideas.** It's wonderful that you are sharing an idea for how to fill an impact gap, but help us understand *why* you believe that idea is valid. Weaker **Map the System** entries include ideas for interventions which the teams seem to have come up with simply by brainstorming, forgetting the fact that they just conducted research from which those ideas could be drawn and backed up.

- **Being too certain.** You are not doing a PhD in this process, nor are you writing a strategy paper for an organisation that is going to immediately implement your ideas. Therefore, it is not expected that you will know everything there is to know or be 100% certain about your ideas. While some business pitch contests might encourage you to 'sell' your ideas, that is not what you need to do here. It's perfectly

acceptable, and refreshingly honest, to include things like, 'If we had more time, we would have liked to research examples of best practices in XYZ, but in our current research, we have not yet found any examples of successful implementation of such a model, though that does not mean it does not exist.'

And with that, we transition to lessons learned!

ACTIONS:

- Read Donella Meadows' piece on leverage points[169]
- Watch 'How Wolves Change Rivers'[170] by Chris and Dawn Agnos.
- Watch 'A Systems Approach to Ending Homelessness'[171] by Bridgeway Partners

Lessons Learned

'It is important to remember that building a toolkit is more than just putting arrows in your quiver. It is about learning, over time, through disciplined practice, how to become an archer'.
- Peter Senge, Hal Hamilton, & John Kania, The Dawn of System Leadership[172] (2015)

Donna Podems, an experienced social sector evaluator, told the following story about systems change: 'I was asked to work with innovators in the national health program of an African country. When I started working with the group, they said, "We aim to shift the health system". After listening for a few hours, I said, "Honestly, I have no idea what you are doing, or what you are trying to achieve… and I haven't a clue how to measure it. I don't understand what it means to 'shift the health system'". And they looked at each other and burst out laughing and said, "We have no idea either"'[173]. This story illustrates that it is easy to assert that a system needs to change, and quite something else to identify how this might happen, as you'll know by the time you get to this stage of your process.

Recalling the Habits of a System Thinker[174] referred to earlier, a number of these habits, or mindsets, refer to the importance of reflecting: surfacing and testing assumptions, changing perspectives to increase understanding, resisting the urge to come to a quick conclusion, checking results, and changing course if needed. These are related to the skills essential to the scientific method, and, it turns out, they are also invaluable to understanding a system.

The practice and process of coming to understand a challenge and mapping the system that surrounds it is never a fixed moment in time. You will never really be able to say, 'There it is, that's the system! Done! Now I just have to commit that to memory and move on to the next step…' You will discover fuzzy and porous boundaries, overlapping systems, systems at different scales, and as you dive deeper and deeper into the challenge, you will likely find that you're crumpling up and tossing away (or hitting 'delete') on your first generation maps and drawing up completely new ones. As you move into the messy complexity of the 'real world' to test your observations, ideas, and assumptions, you will learn that your systems skill-building is more like learning archery[175], and less like memorizing information for an exam.

This is why it is good to start your mapping early. Leave time to pause, put it aside, and come back to it. You should reflect, not only on your own learning, but on what people who regularly engage with and live in the system – as clients, patients, users, practitioners, policymakers, advocates – are saying. Rather than looking to provide answers, you

should be uncovering new questions. To learn more about listening well, watch this video on the 'Four Levels of Listening'[176] by MIT's Otto Scharmer. The Australian nonprofit organisation School of Thought[177] provides open access tools to help with critical reflection and identifying biases. Enact Solutions also has a great handout on unconscious bias[178].

In your group discussions, and even in your final report, be honest about what you don't yet know. As previously mentioned, while some other competitions are asking you to sell an idea or prove you have a complete understanding of a topic, the entire point of **Map the System** is the opposite: to engage in complexity, which is by nature, complex! It is likely that the more you research about a topic, the more you will realise you don't know. In fact, there is a cognitive bias we all suffer from which explains this: the Dunning Kruger Effect[179]. The less you know about something, the more you think you know. Hence, the more research you do, the more you realise how little you know, which can be frustrating. But that's OK! If that is happening to you and your team, you are doing great! That is exactly the point of this type of research. In fact, in some of the classes we have taught on systems, our goal has been that students' self-reported rating of their understanding of a challenge goes down over the duration of the course. If it does, it means that they are uncovering some 'unknown unknowns' – things they didn't know that they didn't know – and have moved them into the realm of known unknowns – things they at least now know they don't know. Once you get to this stage, you can then choose to take action and learn more. In writing up your lessons learned from this report, you may want to include your assumptions which were disproven, or the unknown unknowns you started with – topics you didn't even know were relevant to your chosen challenge, but which you now see are essential pieces of further learning for anyone who wants to dig deeper into the topic.

Another great reflection tool is the Triple Loop Learning Framework[180], an adaptation of the single-loop and double-loop learning articulated by Chris Agyris and Donald Schön, who first described 'Reflective Practice', partly as a way to help smart adults learn how to learn. Triple Loop Learning challenges you to reflect back on your learning in three ways: 1. What are we learning about the things we are doing (the practices, activities, resources, etc.)?; 2. What are we learning about what we are thinking (the patterns, context, and our assumptions and blind spots)?; and 3. What are we learning about how we are being (our emotional triggers, habitual responses, social norms, shared values)? Note that this third question is also where you reflect on your team's dynamics, assuming you are in the challenge with a team.

We are fortunate to live in an era when there is a growing realisation – in education, commercial innovation and other realms – that we need to acknowledge, celebrate, and learn from 'failure'. While the costs of failure are obviously higher in the realm of social and environmental innovation, failures can and do happen regularly. Your role in mapping a system includes anticipating where the potential for failure might exist, reflecting on real-world examples of how a systems change effort, intervention, or idea actually made outcomes for people (or the planet) worse. For more on reflecting on failure, check out Fail Forward's[181] resources or read Amy Edmonson's article 'Strategies for Learning from Failure'[182].

You will discover that in the time of a few short months, you are becoming incredibly well-informed on a topic you may have only had a vague sense of until you decided to take part in **Map the System**. Despite this, you are not yet an expert. You could do a PhD on the issue and still only be scratching the surface of one aspect of the challenge. The more you know about something, the more questions reveal themselves and the more answers become tentative. This is good, natural, and healthy. And here's a scary thought: you may soon discover, if you haven't already, that the system you mapped is not really the system at all, or is only one slice. There are many, many rocks to still be turned over – new dimensions to the challenge, new gaps, and new levers of change to be uncovered. In fact, this process is never really complete. Fortunately, we understand this, and the **Map the System** judges also know this. Therefore, they will want to know things like:

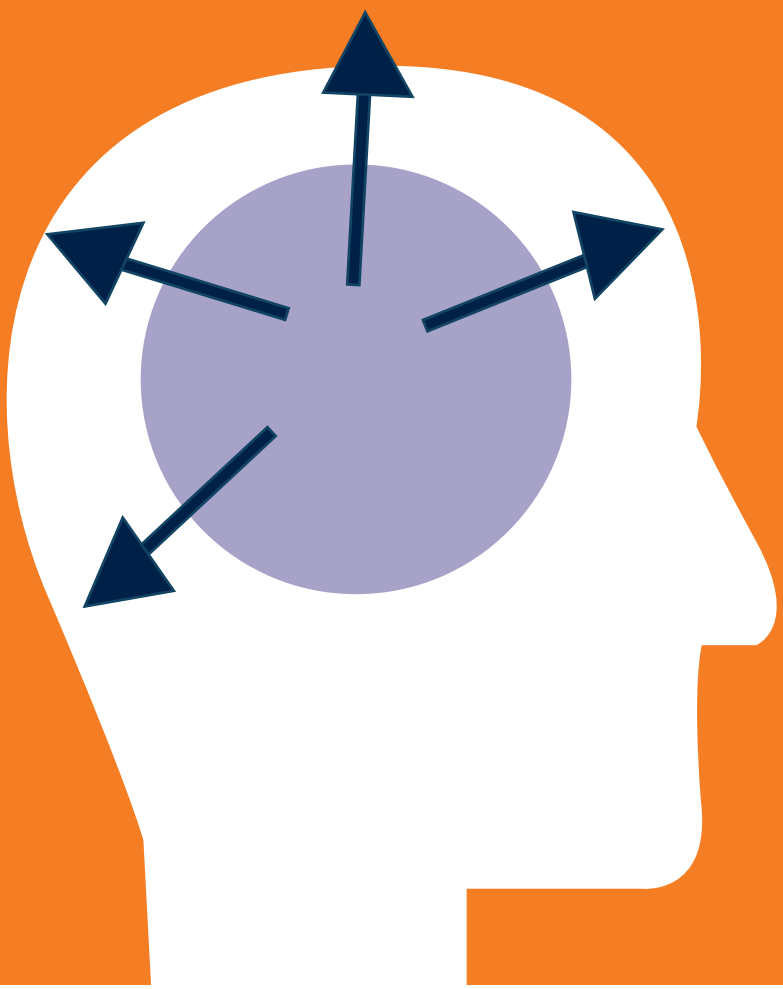
- If you had more time – say, six more months to research this challenge – what would you still want to learn?
- What are the gaps in your research? What data is absent, or what perspectives are missing, that you wish you had access to?
- What was your learning journey in this process? How were your assumptions challenged or ideas changed?
- What, if anything, will you do to continue your learning process, and how has the process to date helped you uncover this path?

Be open about these. And above all, answer humbly.

ACTIONS:

- Think about the Four Levels of Listening and Triple Loop Learning tools described previously.
- Discuss how you want to track your learning and present your lessons learned. Have open and honest discussions with your group about your learning regularly, perhaps a 10-minute self-reflection or group discussion answering the following questions: How have your assumptions been challenged? What do we still now know? What else would we need to learn to really understand this challenge? Include information about your research and this process when you present your **Map the System** findings.
- If you get frustrated with this process, feel like you have gone down a dead end, or are having difficult team dynamics, walk away from your work for a while and take a break. Maybe go for a walk or have dinner with your team, during which discussion of the challenge is forbidden. Come back to it with fresh eyes and hands, a curious mind, and an open heart.

Putting Learning Into Action



Presenting Your Learning

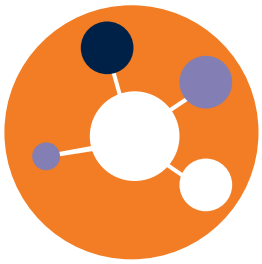
Photo by Fisher Studios courtesy of Skoll Centre for Social Entrepreneurship, Saïd Business School

As you develop a better understanding of your chosen challenge, think about how you will present this information in a way that helps people not only comprehend but also understand the urgency or importance of the challenge. Most of the general population, including the **Map the System** judges, likely know less about your topic than you do now, so part of your job is to quickly take them on an expedited learning journey. Assume they are starting with little knowledge on the topic and help them get up to speed on your key findings.

Remember, you will be presenting your learning in up to three ways, that require **three sets of storytelling skills – visual, written, and oral.** The **Map the System** deliverables include:

1. A visual 'map'
2. A written summary of research findings (and bibliography)
3. A 10-minute in-person presentation (for those whose universities require this, or those who make it to the Canadian or Global Final)

VISUAL MAP



The **visual map** will itself have multiple components, and, as such, can actually be multiple maps. As they view the visual systems maps submitted, the judges will determine whether the submission adequately reflects the necessary level of *detail* in a *creative* and *insightful* way.

The term 'map' in **Map the System** is used in a very broad sense. It means a way of symbolically depicting the relationships between elements (people, organisations, service models, supply chains or resource flows, power structures, etc.) within some 'space' (the space, in this case, being the system). While you obviously don't have to be a cartographer or an information designer to do this, having some appreciation for data visualisation, the power of graphic design, and visual storytelling is helpful. As such, consider having someone on your team who can design and present information in a visually readable way, or seek out a faculty member or practitioner who can give you some advice on visual storytelling. Later on in this section we talk about visual mapping tools**, but keep in mind that less can be more:** it doesn't have to be a classic detailed Kumu-style systems map, capturing every nuanced element in breathtaking detail. Such ambitious maps can actually get quite cluttered and confusing. **This is not an engineering schematic.** It is perfectly fine to have a series of simpler maps (which describe different aspects or perspectives of your system), or your map may end up looking more like an infographic. Look at some of the previous submissions on the **Map the System** website for ideas for how you might visualise your learning.

Keep in mind that maps are abstractions. You will never be able to include every little detail, nor should you. Plus it's good to save some of this knowledge for the written submission and the Q&A period of an in-person presentation. Focus on the components that are necessary to highlight in order to understand the current results of the system – that is, which elements are necessary to explain why the system is the way it is, and what might be the essential elements necessary for transformation.

Remember that top submissions in the global **Map the System** competition will be available online, and even if you are not a finalist, you may choose to put your work up in a blog or online format. Your visual representation of your learning is an opportunity for you to help others learn from your work. The judges, or anyone who views your submissions online, will not have you there to talk through the visuals. As such, you'll want to imagine how to present your information without physically being present to explain it. (For example, ask yourselves: 'Is our visual map clear enough to convey a sense of the system for those who may know very little about the challenge?') While you will certainly include some text in your visual

map, if an element lends itself to a visual explanation, default to the visual. Refer back to the 5Rs model described previously as a way to help think about visualising the key components of the system.

Visual Mapping Tools

Before we jump into visual mapping tools, we want to remind you of something important. **While there are multiple parts to the Map the System submission, keep in mind that you don't want to 'reinvent' the visual map(s) for your presentation.** You can save yourself a lot of work by keeping a basic symmetry in mind between your presentation, visual map submission, and written summary explanation. They are simply three mediums through which you are telling the same story. This means that you should be able to recycle your images, font, colour and other design components in your map, presentation and even – if you want – in your written summary.

While you may prefer to use Powerpoint, Prezi, Google Slides (all compared later in this section), or even Word for your visual map, you may want to consider using applications specifically designed for systems mapping or infographics. Some of the more common tools are listed below, as well as some additional tools to help you add visual interest and clarity.

Systems-mapping applications:

Kumu[183] - A data visualisation platform that helps organise complex information into interactive relationship maps. Free to use if you are willing to share your work publicly. Kumu is suggested as a tool to consider using at an early stage in your mapping.

InsightMaker[184] - Like Kumu, this tool is designed to help you visually illustrate complex system, and also has a simulation tool. Free and open source.

Plectica[185] - Allows you to collaboratively assemble a map from different locations (like Google Docs).

Infographics design applications:

Venngage[186] - An easy-to-use infographics tool. Although there is a free version, many students end up preferring the paid version.

Canva[187] - A graphic-design tool with a library of off-the-shelf infographic templates. Free with a paid Premium version.

Microsoft Visio[188] - Creates visuals such as block diagrams, flowcharts, and timelines. Not free, but integrates with MS Office applications like Powerpoint.

LucidChart[189] - A Visio alternative that is easier to use.

SimpleMind[190] - Mind mapping tool. Limited functionality in the free version.

Other online tools:

Noun Project[191] - A massive library of creative commons-licensed visual icons.

WRITTEN SUMMARY

You can think of the **written summary** as your research paper, but it **does not have to follow a standard essay or academic article narrative structure**. The judges will evaluate whether the report submitted provides sufficient *detail* to understand the r*esearch approach* and *methodology* of the research undertaken, including a summary of *key insights*. It may be more helpful to think of the written summary as a 'primer' or a 'briefing'. How might you brief a minister or elected official on this system? Imagine her saying, 'Tell me what I need to know about this challenge so that I know what we're dealing with here… And give it to me straight – no sugar coating. Who do we need to work with, and why don't we seem to be making any headway on this issue?' Refer to the section **Research Tips** for more on structuring and citing your written summary. The judges will also look at your bibliography to see if it is thorough, diverse (in terms of disciplines and range of sources), current, and consistent with or supportive of your overall submission.

PRESENTATION

The **10-minute presentation** is the part of this competition that most closely mimics a pitch competition, but only insofar as you are telling a story. It is less about persuading the judges, and more about impressing on them the depth of your research and learning journey, as well as your ability to see connections, gaps, and potential levers of change. If you have a personal story or connection to the issue, such as you, a friend, a relative, or your community being impacted by the issue in some important way, make sure to include that in your presentation. When book publishers are being pitched non-fiction topics, they always look for the story – what is the human angle here? What will make this memorable and elevates it above a dry, dispassionate research presentation? You don't just want the judges and audience to be interested in this -–you want them to realise why they should care. In the best presentations, the audience will walk away feeling like they have been able to digest your thorough research in a cogent and cohesive manner, and the process was so compelling that they now want to go out and learn more about the issue themselves.

Presentation Apps Compared

	Powerpoint	Prezi	Google Slides
STRENGTHS	• Reliable, near-universally supported presentation software • Great library of animations, transitions and visual effects.	• Dynamic, non-linear and multi-layered, which is great for displaying systems • Visually striking	• Excellent for collaboration • Best application for embedding Youtube videos • Better designed templates • Easy to learn and use
WEAKNESSES	• Linear (although it has good functionality to do basic systems mapping without using another off-the-shelf application) • Online collaboration not possible (although there is a clunky new online companion for a fee), so less ideal for groups • Certain features don't always work the same way on different versions or operating platforms.	• Must be online (or pay for offline version) • The most challenging to learn and use • Zooming and panning can be disorienting for an audience	• Linear • Works much more reliably online – vulnerable offline
BOTTOM LINE	Reliable and powerful all-round presentation tool, but less ideal for collaborating.	Powerful way to display a system, but if you don't have online access for the presentation, you'll be in trouble.	Can't be beat for group collaboration, but middling in every other respect.

Telling Your Story in 20 Slides

For teams that are invited to do a presentation, you will have 10 minutes to describe your challenge to the judges (and potentially, depending on the campus or where you are in the competition, to a public audience). You may choose to have only certain members (or even just one member) of your team lead the presention, particularly if one of your group is particularly strong at speaking. However, there may be advantages to having all members of the team speak at some point in the presentation, as it shows a strong shared passion and knowledge of the subject matter. Certainly, all team members should go on stage for the Q&A section and be prepared to join the final discussion.

Make sure you are technically prepared – don't rely on 'the cloud' to be the way you access your presentation. Make sure you have it on a USB flash drive (and make sure it is the latest version you've saved).

Photo by Fisher Studios courtesy of Skoll Centre for Social Entrepreneurship, Saïd Business School

Save in multiple formats (for example, Powerpoint and PDF), and save copies of any video or multimedia files separately. Again, don't rely on internet access when you are up on stage. Ideally, you'll also want to test out the presentation across multiple platforms (Mac and PC), and make sure the aspect ratio (standard versus widescreen) you create the presentation in is actually supported in the competition.

The following is a very generalised sample of one way in which a story can be constructed and described around a challenge. Do not use this as a template – use whatever suits your particular challenge and story. This format may not make sense for how you wish to reveal and describe your challenge, but it may spark some thought in terms of pieces of your story that may be missing.

A possible presentation flow

1. There is a striking anecdote or statistic that gets people's attention.	2. There is a personal or visceral connection that reveals what brought you to the issue, or why you are passionate about it.	3. Reveal the problem, in all its naked vulnerability.	4. Unpack the depth of the problem: why is it so pervasive or difficult to address?	5. Explain how it came to be this way (consider a timeline or historical perspective).
6. Explain who the players are.	7. Explore one dimension of the system (perhaps through a user perspective or a relationship or power map, for example).	8. Explore another dimension of the system, perhaps zooming in to a portion of the previous, or revealing a new map.	9. Explore yet another dimension of the system, perhaps zooming in to a portion of the previous, or revealing a new map.	10. Perhaps yet another dimension or zooming in. The complexity, severity, and profundity may be making the audience feel pretty uncomfortable by now.
11. Consider a relief slide to pull away from the detail for a few seconds – a powerful photo, perhaps – and let people take a breath.	12. Reveal a very high-level overview of the landscape of potential solutions.	13. Describe what we do know (or what safer bets there may be) based on the research (yours and others' research).	14. 'Zoom in' on one realm of the solution space, describing an organisation, policy, movement, etc. that is attempting to address the problem.	15. 'Zoom in' on another part of the solution space.
16. Point out the gaps – what's missing between the problem and solution landscape?	17. Identify the potential levers of change.	18. Focus in on particularly powerful or promising levers of change and how they might be implemented.	19. Describe the lessons you have learned.	20. Return to your original personal story.

SPEAKING TIPS

While you want to come across as knowledgeable and confident, and while you'll definitely want to rehearse your presentation and timing many times over, you also want to avoid being overly scripted or theatrical. Consider also that, if you are trying to do a memorised speech, missing a line can throw you off). Some students in **Map the System** may have previously been part of a pitch competition, such as Enactus or the Hult Prize, but there is a danger that such a presentation will come across as overly staged in this competition. Aim for less drama and more gravitas. Also make sure you rehearse the story, not the *words.* You don't have to memorise the presentation word-for-word (unless you are quoting someone). And don't forget to smile. :)

Photo by Fisher Studios courtesy of Skoll Centre for Social Entrepreneurship, Saïd Business School

If you want to strengthen your speaking skills, look at your on-campus resources. There may be communications courses, credit courses in public speaking, or non-credit continuing education courses.

DIGGING DEEPER:

- For more on the art of telling your story in a concise way, look at the Pecha Kucha[192] methodology (20 slides of 20 seconds each).
- Check out TED's 'How to Make a Great Presentation'[193] or '10 Tips for Better Slide Decks'[194]. These tools emphasize that less can be more – simplicity of visuals and sparseness of text can have much more power than cluttering your slides. Avoid bullet points if you can, and don't use sound effects (unless you are using embedded video).
- Coursera offers a number of courses on public speaking and presenting.[195]
- You may also consider enrolling in a Toastmasters[196] program.

What's Next?

Having gone through the process of researching and mapping a system, it's likely that you have put a huge effort into your own learning. High fives! **No matter the outcome of the Map the System process, the learning you gained is the most important outcome.** And now you have the chance to ask yourself, 'What's next?'

SHARING YOUR LEARNING

It is likely that, through this process, a number of people have helped you along the way. It might be the people you interviewed, the librarian who helped you understand your school's catalogue system, or a classmate who helped you review your initial presentation design. You now have an opportunity to thank those people, and honour their support, by sharing what you have learned, with them and with others. It's also a great opportunity to garner additional interest in your challenge and in your own emerging talents as a systems thinker.

'To truly transform systems, we all need to learn how to embrace ambiguity, to make friends with failure, to understand that our inner journey is inextricably linked to our external success, and to no longer blame a single cause for some outcome. We must learn to look deeper, to look for all those hidden causes that are interconnected and together reproduce and perpetuate those symptoms or outcomes we don't like.'
- Linda Booth Sweeney[197]

Some ways you might consider doing that include:

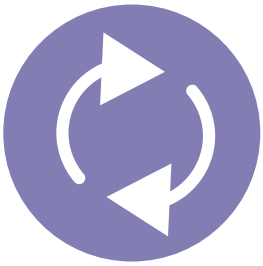
- **Sharing your report and visuals with those who helped you.** If you like, you can ask for feedback, or ask them if they know of anyone for whom this research might be of use.
- **Convene local stakeholder.** If you worked on a local issue and were able to connect with a range of local stakeholders and/or experts, you might want to share your findings with those people in a collective gathering. Or, perhaps there is a foundation interested in the area that would like to see your research. If you are doing a presentation as part of the competition, at your school or one of the national or global final events, you could consider both or either of these options prior to your presentation as a chance to get feedback, while also allowing those members of the community to meet each other, if they haven't already.
- **Share your learning online.** You might want to write a blog about what you learned (your initial assumptions, learning journey, and current identification of gaps), and/or post your final report and visual materials online. You might want to turn your research into an ongoing blog or research portal that you continue to add to. If you have curated, uncovered, or condensed learning in a way that is cogent or useful to others, sharing it online will be a great gift. You could then share that

link with professionals in the sector, via personal contacts or social media searches, who might benefit from the learning you have curated and shared.

- **Share your presentation with your peers.** While some universities host public events for the **Map the System** presentations, others do not – but that doesn't mean you can't organize one on your own! Perhaps there is a student group or club with related interests who would like to see your 10-minute presentation. Or, if there are a number of **Map the System** entrants who want to share their learning more broadly, you could organize a wider event. Many universities also host 'research days' or other celebrations of student work where you may have an opportunity to share.

While you might not have known much about your challenge when you started, you may be pleasantly surprised by where you end up. Many past **Map the System** winners have curated and created learning which is very valuable to those working on their chosen challenge. Even just your bibliography and collection of resources, your visual map of the problem, or your list of current solution efforts might be helpful for someone currently working on the issue or looking to get a job in a related field. Find a way to share your learning so your efforts have even further reach and impact.

RECEIVING FEEDBACK



One of the most important, yet often overlooked learning opportunities in group projects is the chance to give and receive feedback. In some degree programs, students are asked to work in groups for countless numbers or projects. If you are in such a program, and you are not making the time for group and peer to peer feedback at the end of each project, then you are missing out on what might be the most valuable piece of your learning. As we all know, it's great if someone has top marks on their CV, but if no one enjoys working with them, the A's don't matter. Here is your chance to find out where and how you might grow in your own contributions, and to practice giving feedback in a constructive and generative way.

Remember, feedback is a gift, not a gun. If you give it as a gun, intending to hurt someone else or to simply point out their flaws, it can backfire. If you give feedback as a gift to help someone see something they might not have noticed and with the intention of supporting them in their growth, it is then possible for it to be received as such.

Here is an easy way to set up a feedback session:

- Go to a quiet space in a cafe, park, or other pleasant area to have a conversation and sit in a circle.

- Perhaps you want to start with a group feedback session, not focusing on any one person's contributions but on how the group functioned overall. You can do that in a number of ways, including:
    - Have an open conversation about it by asking these questions and seeing where the conversation goes: How did we function as a group? What could we have done better? What we did do well?
    - Ask everyone to take out a sheet of paper and a pen and give them five minutes to write down answers to those questions to then share with the group.
    - If your group is larger, break into groups of two or three to talk about the questions, and then share with the wider group.
    - Do a 'PLUS / DELTA' feedback session. At the top of a whiteboard or paper, list the plus sign on one side and the delta (triangle) symbol on the other, with a line down the middle. On the Plus side, list all of the tactics, strategies, and actions you used which you would like to see repeated in future groups. (Don't focus on things like, 'It was a sunny day and our meeting felt warm', but rather on actions and repeatable patterns which would be within your control) On the Delta side, list the actions, strategies, and tactics you would want to see changed or not repeated. This type of process is very useful for groups who will continue to work together, or can be done in the middle of a longer group project process.
- Now it is time for individual feedback.
    - Take turns focusing on one team member at a time. When it's your turn, give yourself feedback first by answering these two questions:
        - ◊ What are the things I am proud of regarding how I contributed to this group?
        - ◊ What are the areas I think I could have improved regarding how I showed up in this group?
    - Then let the rest of the group go around the circle and share their feedback about how they see your strengths and areas for future growth.
    - Don't make this part a conversation – the receiver speaks first, giving their self-assessed feedback, each other person speaks their feedback, and the receiver can end with their thanks before moving on to the next team member.
- Perhaps close with a group dinner or some other way to celebrate the incredible learning you have achieved together!

By getting into a rhythm of conducting regular feedback sessions, you will find it easier and easier to give and receive both positive and negative feedback, and will be able to build your strength as a team participant. Don't miss out on this important growth opportunity!

WHAT'S NEXT FOR YOU?

Some students pick a **Map the System** challenge related to future career goals. Some pick a topic they simply want to learn more about. Others are less concerned about their chosen topic and more interested in the process of learning about a social or environmental system. What was this process about for you? Did you achieve your goals on your chosen path? Either way, how can you channel what you have learned into your next steps?

Careers

The **Map the System** process is an ideal learning journey for anyone looking to get their foot in the door for a career related to their chosen challenge. You have now gained a deeper understanding of the challenge and possess a map of key players working in the sector as well as ideas about impact gaps. This knowledge is the ideal fuel for a career move. When you follow up with anyone you interviewed to share your report, you can also mention that you are looking for an internship, role, or further learning opportunity related to their work. Hopefully you have gained an understanding of the types of organisations or efforts across sectors that you find most intriguing. Is there someone leading the way in the field from whom you'd like to learn? Is there someone performing a role you think would be an exciting future career step? If so, reach out to them! Let them know you have done this research and you are interested in learning about their career path. Maybe they would be willing to meet for a coffee or have a short 20-minute chat to help you understand possible paths into their field of work. It's worth an ask. :)

Research

If you chose this challenge to learn more about a given topic, you might find that your learning journey has only just started. While you have likely put significant effort into your learning, there are likely others who are doing full PhDs on similar topics and taking their research deeper. If you think further research might be the next step for you, you can work to build upon what you have already learned as a launching pad for a future research proposal. Perhaps you too want to take this work into a PhD program or want to find an organisational host through which to do more practical research related to their work. The research you have already done might have led you to academics, institutions, or funders who might be interested in partnering with you to take this work further. Some institutional competitions, as well as the Global Final, provide winners with funding that participants can use to deepen or extend their system inquiry. Even if you don't make it to the finals, perhaps your university or a local academic institution has a research advisor who can help you think

about next steps in your research path. Or perhaps you want to pitch your work to a funder or organisation working on your challenge, letting them know what you have already learned and what further research you hope to conduct. If your learning goals are aligned with their learning needs, you might have found yourself a host!

Systems Understanding

The skills of a systems thinker are valuable in roles across every sector. The terms 'systems' and 'systems change' are currently gaining popularity in the social sector, with many foundations and impact organisations starting to use that vocabulary, but you will find reverence for these skills across all sectors. You can continue to hone these skills by taking further courses related to systems practice and seeking out roles that allow you to put those skills into practice. Before you know it, you might be the systems lead at a local organisation or working on a team related to systems thinking education. We were surprised to find ourselves here too, but are delighted to be able to share some of these perspectives and learnings with others.

INNER WORK

These guidelines were designed to help students complete the **Map the System** process, but they do not encompass the entirety of the work needed to contribute to systemic change. Apart from in the aforementioned feedback section, a key area we have largely overlooked thus far is 'inner work', which comes from the idea that we can't change the world unless we are willing to change ourselves. When Daniela Papi-Thornton wrote 'Tackling Heropreneurship'[198] and the first design of the Impact Gaps Canvas, it was partially to speak out against the lack of inner work built into social entrepreneurship education. This work constitutes a core component of social change that many of us were overlooking in our educational plans. Many students she encountered stated that they wanted to be a heroic social entrepreneur, but many of them didn't want to engage in self-reflection about their own relationships with power and privilege. Others wanted to take the lead on running an organisation to help others, but didn't want to take the time to think about how they might need to grow in order to do that.

Don't make that mistake yourself as you plan your own journey as a changemaker. It's likely that you already have your own practice of self-reflection and personal growth, from journaling and meditation to working with a therapist or coach. Where could you stretch yourself in this respect? Is there a personal development course on your radar which you'd like to save up for, such as a diversity training program, a Theory U course, or a program with a coaching organisation that takes systems into account,

like Strozzi Institute or CRR Global? Is there a topic, such as reflecting on your own race or power, which you have avoided and you'd like help digging into? Have you considered working with a coach, forming a peer-coaching circle, or getting trained in reflection and facilitation skills?

You can start by reflecting on your learning journey through the Map the System process. Where were your key learnings? Were any of your assumptions challenged? How would you have liked to have participated differently if you could go back in time and do it again? What skills, perspectives, and personal learning do you want to focus on so you can show up differently in the future.

By combining the content knowledge, systems understanding, and systems perspectives you have gained through this process with a focus on personal development skills, you will be cultivating your leadership potential to significantly contribute to much needed systems change. **Keep using the skills you have cultivated to find your way forward, as it will benefit us all.**

DIGGING DEEPER:

- Disability rights advocate Al Etmanski's IMPACT: 6 Patterns to Spread Your Social Innovation[199] is a beautiful push for people setting out on a changemaking journey. Especially useful to Canadian students, as it presents six deep patterns being used across the country to achieve lasting social, economic, and environmental justice. Alternately, read this excellent synopsis[200] of the book by Dan Overall.
- Consider applying for, or enrolling in, a systems-focused leadership program. Here are just a few examples:
  - Strozzi Institute[201]
  - CRR Global[202]
  - School for System Change (Forum for the Future)[203]
  - Systems Sanctuary[204]
  - Getting to Maybe Residency at the Banff Centre[205]

Here is a Dropbox link to both the blank and detailed Impact Gaps Canvas files. http://bit.ly/ImpactGapCanvasLink

Endnotes

1 "Systems Practice Course," *Plus Acumen*, accessed January 15, 2019, https://www.plusacumen.org/courses/systems-practice.

2 "Map the System," Map the System, accessed January 23, 2019, http://mapthesystem.sbs.ox.ac.uk.

3 Daniela Papi-Thorton, "Systems-Led Leadership," accessed January 15, 2019, http://systems-ledleadership.com/.

4 "Impact Gaps Canvas," *Systems-Led Leadership*, accessed January 15, 2019, http://systems-ledleadership.com/impact-gaps-canvas/.

5 Daniela Papi-Thorton, "Tackling Heropreneurship," accessed January 15, 2019, tacklingheropreneurship.com.

6 Daniela Papi-Thorton, "Reclaiming Social Entrepreneurship," Youtube video, 17:40, posted by "TedX Talks", July 6, 2017, https://www.youtube.com/watch?v=RdrfMqBRfEQ.

7 Ibid.

8 Vanessa Kirsch, Jim Bildner, and Jeff Walker, "Why Social Ventures Need Systems Thinking," *Harvard Business Review*, July 25, 2016. https://hbr.org/2016/07/why-social-ventures-need-systems-thinking

9 Systems-Led Leadership, "Impact Gaps Canvas."

10 Marc Ventresca, "Don't Be an Entrepreneur, Build Systems," *Youtube video*, 12:35, posted by "TedX Talks", July 10, 2011, https://www.youtube.com/watch?v=l9T3diyqRPg.

11 Pamela Hartigan, "The Promise of Entrepreneurship,"*Huffington* Post, March 11, 2013, https://www.huffingtonpost.com/entry/the-promise-of-entrepreneuring_b_2855160.

12 Map the System, "Map the System."

13 "The Essential Guide to Volunteering Abroad," *Learning Service*, accessesd January 8, 2019, http://learningservice.info/.

14 Claire Bennet et al. Service: *The essential guide to volunteering abroad.* (Red Press, 2018).

15 Map the System, "Map the System."

16 Evaluation Criteria Scorecard," *Map the System*, retreived from: http://mapthesystem.sbs.ox.ac.uk/wp-content/uploads/2017/09/2.-Map-the-System-2018-Evaluation-Criteria-Scorecard.docx.

17 "Guidelines," Map the System, accessed January 15, 2019, http://mapthesystem.sbs.ox.ac.uk/guidelines/.

18 Rob Ricigliano, "Systems Practice Course Overview," *Plus Acumen video*, 1:10, December 16, 2016, https://vimeo.com/196006274.

19 Ibid.

20 "Systems Practice," The Omidyar Group, n.d., retreived from: https://docs.kumu.io/content/Workbook-012617.pdf.

21 Donella Meadows, *Thinking in Systems: A Primer,* (White River Junction, VT: Chelsea Green Publishing, 2008).

22 Ibid.

23 Craig Reynolds, *Flocks, Herds, and Schools: A Distributed Behavioral Model*, July 1987, http://www.cs.toronto.edu/~dt/siggraph97-course/cwr87/.

24 Meadows, *Thinking in Systems.*

25 Tom De Wolf, Tom Holvoet, "Emergence Versus Self-Organisation: Different Concepts but Promising When Combined," *Lecture Notes in Computer Science*, vol 3464, (2004): 1-15, https://doi.org/10.1007/11494676_1

26 Gene Bellinger, "Systems Thinking, an Operational Perspective of the Universe," accessed January 5, 2019, http://www.systems-thinking.org/systhink/systhink.htm

27 Peter Senge, "What is Systems Thinking?" *Youtube video*, 1:08, https://www.youtube.com/watch?v=V38HrPnYkHI

28 Peter Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization*, (New York: Currency: 2006).

29 Anosha Roya Zereh, "Elephant in the Room and the Blind Men," accessed December 15, 2018, http://theafghanmonalisa.blogspot.com/2014/03/the-elephant-and-blind-men-arent-we-all.html

30 Ibid.

31 Meadows, *Thinking in Systems.*

32 Senge, *The Fifth Discipline.*

33 Tom Wujec, "How to Make Toast" *TEDGlobal video*, 9:02, https://www.ted.com/talks/tom_wujec_got_a_wicked_problem_first_tell_me_how_you_make_toast?language=en.

34 Anand Giridharadas, "Beware Rich People Who Say They Want to Change the World," *The New York Times*, August 24, 2018, https://www.nytimes.com/2018/08/24/opinion/sunday/wealth-philanthropy-fake-change.html

35 "Systems Thinking Tools and Strategies: Habits of a Systems Thinkers," *Waters Foundation*, accessed December 20, 2018, https://www.watersfoundation.org/systems-thinking-tools-and-strategies/habits-of-a-systems-thinker/.

36 Steve Whitla, "Mapping Society for a More Meaningful World," *Youtube video*, 18:11, https://www.youtube.com/watch?v=hAFclNJ--Gs&feature=youtu.be.

37 "The Map is Not the Territory," *Farnam Street*, accessed on January 7, 2019 https://fs.blog/2015/11/map-and-territory/.

38 "Clarity Begins With Kumu," *Kumu*, accessed on January 6, 2019, https://kumu.io/.

39 "Systems Thinking Toolkit," *FSG*, accessed on December 17, 2018, https://www.fsg.org/tools-and-resources/systems-thinking-toolkit-0.

40 "Horizons Foresight Method: System Mapping," *Government of Canada*, last modified September 12, 2018, http://www.horizons.gc.ca/sites/default/files/uploaded_media/2016-274-presentation-notes-eng_0.pdf

41 Rob Ricigliano, "Defining a System Goal," *Plus Acumen video*, 3:31, https://www.dropbox.com/sh/er59d4mlxeysjcw/AAAF6RDreZUei_wlDpiBloiKa/Videos?dl=0&preview=RR+-+L2+-+Systemthink.mp4&subfolder_nav_tracking=1

Endnotes

42 Tom Wujec, *How to Make Toast.*

43 Draw How to Make Toast Exercise", Draw Toast, accessed on January 8, 2019, https://www.drawtoast.com/

44 Waters Foundation, *Habits of a Systems Thinker.*

45 Farmam Street,*The Map is Not the Territory.*

46 Rob Ricigliano, "Types of Problems to Address with Systems Thinking," *Plus Acumen video*, 2:47, https://www.dropbox.com/sh/er59d4mlxeysjcw/AAAF6RDreZUei_wlDpiBloi-Ka/Videos?dl=0&preview=RR+-+L7+-+problems+(1).mp4&subfolder_nav_tracking=1

47 Liberating Structures, "Agreement Certainty Matrix," accessed on December 15, 2018, http://www.liberatingstructures.com/27-agreement-certainty-matrix/

48 Rob Ricigliano, "Complexity Spectrum Charts," *Plus Acumen video* https://www.dropbox.com/sh/er59d4mlxeysjcw/AAAF6RDreZUei_wlDpiBloiKa/Videos?dl=0&preview=RR+-+L7+-+problems+(1).mp4&subfolder_nav_tracking=1

49 "The Stacey Matrix," GP Training, accessed on January 12, 2019 https://www.gp-training.net/training/communication_skills/consultation/equipoise/complexity/index.htm

50 Sheldon Kennedy Childhood Advocacy Centre, "Home," accessed on December 5, 2018, https://sheldonkennedycac.ca/

51 The Lived Experience, "The Value of Lived Experience," accessed on December 5, 2018 https://thelivedexperience.org/

52 Balijeet Sandhu, *The Value of Lived Experience in Social Change: The Need for Leadership and Organisational Development in the Social Sector.* Clore Social Leadership Project and the Scottish Recovery Centre.

53 Courtney Martin, "The Reductive Seduction of Other People's Problems," *Bright Magazine*, January 11, 2016, https://brightthemag.com/the-reductive-seduction-of-other-people-s-problems-3c07b307732d

54 Ibid.

55 Rob Ricigliano, "Bound Your System," *Plus Acumen video*, 3:21, https://www.dropbox.com/sh/er59d4mlxeysjcw/AAAF6RDreZUei_wlDpiBloiKa/Videos?dl=0&preview=RR+-+L13+-+Bound+(1).mp4&subfolder_nav_tracking=1

56 "Ethical Considerations," Map the System, accessed on January 8, 2019, http://mapthesystem.sbs.ox.ac.uk/ethical-considerations/

57 Ernest L. Boyer, *Scholarship reconsidered: Priorities of the professoriate*, (New York: Carnegie Foundation for the Advancement of Teaching, 1990).

58 Zina O'Leary,The *Essential Guide to Doing Your Research Project* (London: SAGE Publications, 2017).

59 "What is a 'Good' Source? Determining the Validity of Evidence," University of Maryland, accesed on January 15, 2019 https://myelms.umd.edu/courses/1082806/pages/what-is-a-good-source-determining-the-validity-of-evidence.

60 "Our Approach," *In With Forward*, accessed on January 4, 2019, https://inwithforward.com/approach/.

61 Map the System, *Ethical Considerations.*

62 What Works Network," *Government of UK Cabinet Office*, last modified January 14, 2019, https://www.gov.uk/guidance/what-works-network.

63 Franklin, Joseph, et al. "Risk Factors for Suicidal Thoughts and Behaviors: A Meta-Analysis of 50 Years of Research", *Psychological Bulletin.* Vol 143, No. 2., p. 187-232. https://www.ncbi.nlm.nih.gov/pubmed/27841450

64 Home", *RAND Corporation*, accessed on January 14, 2019, https://www.rand.org/.

65 "Successful Societies Initiative," CIFAR, accessed on January 14, 2019, https://www.cifar.ca/research/programs/successful-societies.

66 "Home," *Centre for Aging Better*, accessed on January 14, 2019, https://www.ageing-better.org.uk/.

67 Home," *What Works Wellbeing*, accessed on January 14, 2019, https://whatworkswellbeing.org/

68 "Benefit-Cost Results," *Washington State Institute for Public Policy*, accessed on January 14, 2019: https://www.wsipp.wa.gov/BenefitCost

69 "Home," *The Conversation*, accessed on January 14, 2019, https://theconversation.com

70 "Home," *Ballard Brief,* accessed on January 14, 2019, http://ballardbrief.org/

71 "Home," *Learn Gala*, accessed on January 14, 2019, https://www.learngala.com

72 "Home," *Participant Media*, accessed on January 14, 2019, https://www.participantmedia.com/

73 "Home," *SIMA Classroom*, accessed on January 14, 2019, https://simaclassroom.com

74 "Home," *SIMA RAMA Cinema Club*, accessed on January 14, 2019, https://simarama.club/

75 Membership," *SIMA RAMA Cinema Club*, accessed on January 14, 2019, https://simarama.club/membership-account/membership-checkout/?level=6.

76 "Transformation Maps,"*World Economic Forum*, accessed on January 14, 2019, https://toplink.weforum.org/knowledge/explore.

77 "Network Search," *Ashoka*, accessed on January 14, 2019, https://www.ashoka.org/en-US/our-network

78 "Sustainable Development Goals," *Brookings Institute*, accessed on January 7, 2019, https://www.brookings.edu/topic/sustainable-development-goals

79 "SDG SDG Knowledge Hub," *IISD*, accessed on December 21, 2018,http://sdg.iisd.org/.

80 "Everyone Can Do Research Toolkit," *Access Alliance*, May 2013, http://accessalliance.ca/wp-content/uploads/2016/12/Everyone-can-do-research-toolkit-May-2013.pdf

81 "Social Research Methods: Student Researcher's Toolkit," *Oxford University Press*, accessed on January 12, 2019, http://fdslive.oup.com/www.oup.com/orc/resources/sociology/brymansrm5e/student/toolkit/index.htm

82 Michael Quinn Patton and Michael Cochran, *A Guide to Using Qualitative Research Methodology*, (Medicins Sans Frontiers, 2012).

Endnotes

83 Tony L. Whitehead, "Basic Classical Ethnographic Research Methods," (Cultural Ecology of Health and Change, July 17, 2005)

84 Map the System, *Impact Gaps Canvas.*

85 Map the System, *Home*..

86 "2018 Finalists," *Map the System*, accessed on January 6, 2019,http://mapthesystem.sbs.ox.ac.uk/2018-finalists/.

87 Linda Vanasupa, "Systems Thinking - video3- Causes of System Behavior - The Iceberg Analogy," *Youtube video*, 4:51, https://www.youtube.com/watch?v=kUAf1w_x6y4..

88 "A Systems Thinking Model: The Iceberg,"*Northwest Earth Institute*, accessed on Janaury 4, 2019,https://nwei.org/iceberg/.

89 "Causes Diagram," *DIY Toolkit,* accessed on January 5, 2019 https://diytoolkit.org/tools/causes-diagram/.

90 Nesta UK, "Causes Diagram," *Vimeo video*, 2:58, April 14, 2014, https://vimeo.com/91931463.

91 "Causes Diagram Tool," *DIY Toolkit*, https://diytoolkit.org/media/Causes-Diagram-Size-A41.pdf.

92 Map the System, *Impact Gaps Canvas*

93 "Iceberg Model Exercise," *Northwest Earth Institute*, accessed on Janaury 4, 2019, https://nwei.org/assets/Iceberg-example.png.

94 Ryan Mohr, "Making Systems Mapping More Approachable – Part 1," *Kumu Blog*, July 6, 2017, https://blog.kumu.io/making-systems-more-approachable-37896c5cd482

95 Ibid.

96 Ryan Mohr, "Making Systems Mapping More Approachable – Part 2," *Kumu Blog*, August 25, 2017, https://blog.kumu.io/making-systems-more-approachable-part-2-94c5b552ed3d

97 Ryan Mohr, "Making Systems More Approachable,"*Kumu Blog*, April 28, 2017, https://blog.kumu.io/making-systems-more-approachable-37896c5cd482

98 "Home," *Kumu,* accessed on December 16, 2018, https://kumu.io/.

99 David Stroh,"A Systems Approach to Ending Homelessness," *Youtube video*, 10:28, https://www.youtube.com/watch?v=khFnWMZGcuM.

100 "Poverty, Inc" *Poverty, Inc*, accessed January 15, 2019, https://www.povertyinc.org/.

101 "The 5rs Framework in the Program Cycle," *USAID,* accessed on January 15, 2019, https://usaidlearninglab.org/sites/default/files/resource/files/5rs_techncial_note_ver_2_1_final.pdf.

102 The Ashoka Globalizer," *Ashoka*, accessed January 15, 2019, https://www.ashoka.org/en-CA/program/ashoka-globalizer.

103 Odin Mühlenbein, personal communication with D. Papi-Thornton, April 2018 and January 2019.

104 Odin Mühlenbein, 'Systems Change - Big or Small?', in the *Stanford Social Innovation Review*, February 5, 2008 (online): https://ssir.org/articles/entry/systems_changebig_or_small.

105 "What does system change mean anyway?," *What does System Change mean Anyway?*, accessed January 20, 2019, https://docs.google.com/document/d/1l4BT3eWOmRhVEZlDGermKu3-RGDwejBT-AdctLohRCE/mobilebasic..

106 Srik Gopal, Tiffany Clarke, "Systems Mapping: A Guide to Developing Actor Maps," *FSG*, accessed January 21, 2019: 13, http://mcbc.info/wp-content/uploads/2016/06/Final-System-Mapping-Guide.pdf.

107 Rachel Sinha, Charlotte Millar, "The Finance Lab: A Strategy for Systems Change," *Finance Innovation Lab*, accessed January 12, 2019: 61, https://financeinnovationlab.org/wp-content/uploads/2015/04/FIL_SystemsChange-Web-Final.pdf.

108 Frank Geels, "Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study." *Research policy* 31, no. 8-9 (2002): 1257-1274.

109 Smith, Eddie. (2010). *The adjacent possible*. Practically Efficient blog: https://www.edge.org/conversation/stuart_a_kauffman-the-adjacent-possible

110 McCarthy et al., "An integrated patient journey mapping tool for embedding quality in healthcare service reform', *Journal of Decision Systems*, 25:sup1, 354-368.

111 "Design Kit: The Human-Centered Design Toolkit," *IDEO*, accessed January 17, 2019, https://www.ideo.com/post/design-kit.

112 "Social Feedback Loops," *Systems Academy*, accessed January 17, 2019, https://complexitylabs.io/social-feedback-loops/

113 This critique was first put forward by Norbert Wiener in 1948, but many others have built upon it. Wiener, N. (1948, 2nd revised ed. 1961) *Cybernetics: Or Control and Communication in the Animal and the Machine*., Cambridge MA: MIT Press..

114 "Describing Systems: Feedback Loops," *Waterloo Institute for Social Innovation and Resilience*, accessed January 17, 2019, https://uwaterloo.ca/waterloo-institute-for-social-innovation-and-resilience/sites/ca.waterloo-institute-for-social-innovation-and-resilience/files/uploads/files/42._describing_systems-feedback_loops-accessible.pdf.

115 Guide to Timeline Mapping," *FSG*, accessed January 15, 2019, https://www.fsg.org/tools-and-resources/guide-timeline-mapping.

116 "Guide to Trend Mapping" *FSG*, accessed January 15, 2019, https://www.fsg.org/tools-and-resources/guide-trend-mapping.

117 Marcie Parkhurst, "Tools for Supporting Systems Thinking and Change," FSG, April 21, 2016, https://www.fsg.org/blog/tools-supporting-systems-thinking-and-change.

118 The 5rs Framework in the Program Cycle," *USAID*

119 Linda Booth Sweeny, et al. "In a World of Systems" *Youtube video*, 9:22, https://www.youtube.com/watch?v=A_BtS008J0k.

120 "Generating inter-disciplinary knowledge about social innovations and their processes,"*Waterloo Institute for Social Innovation and Resilience,* accessed January 16, 2019, https://uwaterloo.ca/waterloo-institute-for-social-innovation-and-resilience/.

121 "Describing Systems-Causal Flow Diagrams," *Waterloo Institute for Social Innovation and Resilience*, accessed January 16, 2019, https://vimeo.com/117111950.

122 Rob Ricihliano,"Feedback loops," *+Acumen*, 6:28, accessed January 20, 2019, 6:28, *https://www.dropbox.com/sh/er59d4mlxeysjcw/AAAF6RDreZUei_wlDpiBIoiKa/Videos?dl=0&preview=RR+-+L18+-+Feedback.mp4&subfolder_nav_tracking=1.*

Endnotes

123 "Describing Systems: Feedback Loops," *Waterloo Institute for Social Innovation and Resilience*, 3:20, accessed January 20, 2019, https://vimeo.com/124574774

124 Durkheim, Émile, "The Rules of Sociological Method and Selected Texts on Sociology and its Method," *New York: Free Press*, 1982: 264..

125 "Levels of Participation," *Participatory Methods*, accessed January 12, 2019, http://www.participatorymethods.org/method/levels-participation.

126 "Power Mapping," *Campus Compact*, accessed January 18, 2019, http://mncampuscompact.org/wp-content/uploads/large/sites/30/2018/04/Power-Mapping-Workshop.pdf.

127 Bernard Burns, Bill Cooke, "Kurt Lewin's field theory: a review and re-evaluation," *International Journal of Management Reviews*, September 5, 2012, 15 (4): 408–425, doi:10.1111/j.1468-2370.2012.00348.x.

128 "Powercube," Powercube, accessed January 19, 2019, http://www.powercube.net//

129 The Freechild Project Youth Voice Rubric," *Freechild*, accessed January 19, 2019, https://i0.wp.com/freechild.org/wp-content/uploads/2016/01/Youth-Voice-Rubric-2017-Adam-Fletcher.jpg?resize=662%2C893&ssl=1.

130 "Reconciliation through Education and Understanding," *Kairos*, accessed January 19, 2019, https://www.kairosblanketexercise.org

131 Sean Loney, *An Army of Problem Solvers: Reconciliation and the Solutions Economy. Winnipeg, MB Friesens*, 2016, http://www.armyofproblemsolvers.com/about/.

132 Sean Loney, "How Social Enterprise Can Solve Our Most Costly Problems," *Youtube video*, 17:01, posted by "Tedx Talks", May 30, 2018, https://www.youtube.com/watch?v=3h7j4Jnnsz0.

133 "What is Asset Mapping?," *Vista campus*, accessed January 12, 2019, https://www.vistacampus.gov/what-asset-mapping.

134 "The Five Capitals," *Forum for the Future*, accessed January 12, 2019, https://www.forumforthefuture.org/the-five-capitals.

135 "...Where Appreciative Inquiry, Positive Change Resources, and the Global COmmunity Connect for World Benefit," *Appreciative Inquiry Commons*, accessed January 18, 2019, https://appreciativeinquiry.champlain.edu

136 "New Systems Thinking Tool: Appreciative Inquiry" FSG, accessed January 18, 2019, https://www.fsg.org/blog/new-systems-thinking-tool-appreciative-inquiry.

137 "Africa Centre for Evidence," *Africa Centre for Evidence*, accessed January 21, 2019, https://africacentreforevidence.org/

138 "Atlas of Social Innovation," *Social Innovation Atlas*, accessed January 19, 2019, https://www.socialinnovationatlas.net/.

139 "Canada's Ecofiscal Commission," *Canada's Ecofiscal Commission*, accessed January 15, 2019, https://ecofiscal.ca/

140 "Canada's Evidence Institutions," *Mowat Centre*, accessed January 19, 2019, https://mowatcentre.ca/canadas-evidence-institutions/

141 "Who we are," *Centre for Evidence and Implementation*, accessed December 15, 2018, https://www.ceiglobal.org/

142 "ESADE," *ESADE*, accessed December 2, 2018, http://www.esade.edu/en

143 Kyriaki Papageorgiou, "Labs for Social Innovation," *ESADE, accessed December 2, 2018,* https://www.slideshare.net/ESADE/labs-for-social-innovation-institute-for-social-innovation-esade.

144 "POOSH country report in Austria," *European Centre for Social Welfare Policy and Research,* accessed January 5, 2019, https://www.euro.centre.org/

145 "Philanthropic Foundations Working Together and with Others to Transform Global Food Systems now and for Future Generations," *Global Alliance for the Future of Food,* accessed on January 10, 2019, https://futureoffood.org/

146 "International Development Research Centre," International Development Research Centre, accessed January 2, 2019, https://www.idrc.ca/en

147 "Maytree," *Maytree,* accessed December 28, 2018, https://maytree.com/

148 "Nesta, *Nesta,* accessed January 17, 2019, https://www.nesta.org.uk

149 "One Planet: Handle with Care," *One Planet Network,* accessed January 4, 2019, http://www.oneplanetnetwork.org/

150 "Results-First Clearinghouse Database," *PEW,* accessed January 3, 2019, https://www.pewtrusts.org/en/research-and-analysis/data-visualizations/2015/results-first-clearinghouse-database.

151 "SolutionsU," *SolutionsU,* accessed December 25, 2018, https://solutionsu.solutionsjournalism.org

152 "Stanford Social Innovation Review," *Stanford Social Innovation Review*, accessed January 21, 2019, https://ssir.org/

153 "Results for America," *Results for America,* accessed December 12, 2018, https://results4america.org/.

154 "The Australian Centre for Social Innovation," *TACSI, Accessed January 6, 2019,* https://www.tacsi.org.au/.

155 "About us," *UpSocial,* accessed January 12, 2019, https://upsocial.org/en/about-us.

156 "What Works Network," *GOV.UK,* accessed December 22, 2018, https://www.gov.uk/guidance/what-works-network.

157 "Bio: Adam Kahane," *ReosPartners,* accessed January 12, 2019, https://reospartners.com/reos-management/adam-kahane/.

158 "Leslie Crutchfield," *How Change Happens,* accessed January 14, 2019, https://www.howchangehappens.com/author/.

159 Duncan Green, "How Change Happens," *Oxford, UK: Oxford University Press, 2016,* http://how-change-happens.com/

160 "Beyond Organizational Scale: How Social Entrepreneurs Create Systems Change," *World Economic Forum,* May 2, 2017, https://www.weforum.org/reports/beyond-organizational-scale-how-social-entrepreneurs-create-systems-change.

161 Sharon Jones-Eversley, "What is Appreciative Inquiry," *Towson University, Youtube video,* 2:13, https://www.youtube.com/watch?v=7RpfFIFC5ss.

162 Donella Meadows, "Leverage Points: Places to Intervene in a System," *The Donella Meadows Project*, accessed December 17, 2018, http://donellameadows.org/archives/leverage-points-places-to-intervene-in-a-system/.

163 Meadows, *Thinking in Systems.*

Endnotes

164 "Scared Straight," *Washington State Institute for Public Policy*, accessed January 4 2019, https://www.wsipp.wa.gov/BenefitCost/Program/114.

165 Rob Ricigliano, "Stories of Systems Thinking," *Plus Acumen,* Video, 4:15, February 1, 2017, https://www.dropbox.com/sh/er59d4mlxeysjcw/AAAF6RDreZUei_wlDpiBloiKa/Videos?dl=0&preview=RR+-+L3+-+Stories.mp4&subfolder_nav_tracking=1.

166 "How Wolves Change Rivers," *Sustainable Human, Youtube video*, 4:33, February 13, 2014, https://www.youtube.com/watch?v=ysa5OBhXz-Q.

167 "Systems Thinking: A cautionary Tale (Cats in Borneo)," *Sustainability Illustrated, Youtube video,* 3:08, March 6, 2014, https://www.youtube.com/watch?v=17BP9n6g1F0.

168 "Viewing Capacity Development Through Four Dimensions of Change," *itad,* accessed January 12, 2019, https://itad.com/viewing-capacity-development-through-four-dimensions-of-change/.

169 Donella Meadows, "Leverage Points: Places to Intervene in a System," *The Donella Meadows Project, accessed December 21, 2018,* http://donellameadows.org/archives/leverage-points-places-to-intervene-in-a-system/

170 "How Wolves Change Rivers,"*Sustainable Human*.

171 Stroh, "A Systems Approach to Ending Homelessness."

172 Peter Senge, Hal Hamilton, John Kania, "The Dawn of System Leadership", *Stanford Social Innovation Review,* 2015, https://ssir.org/articles/entry/the_dawn_of_system_leadership.

173 Patton, M.Q., McKegg, K., Wehipeihana, N. (2015). *Developmental Evaluation: Principles in Practice*. New York: Guilford Press, p. 293. Quote also found in Cabaj, M. (2018) *Evaluating Systems Change Work: An Inquiry Framework*. Waterloo, ON: Tamarack Institute, which itself has a number of useful insights for reflecting on systems change. http://www.tamarackcommunity.ca/latest/evaluating-systems-change-results-inquiry-framework

174 "Habits of a System Thinker," *Waters Foundation,* 2014, http://www.watersfoundation.org/wp-content/uploads/2018/03/HOST_Blue-1.pdf#page=1&view=FitH.

175 Alexandra Daignault, Dan Overall, James Stauch, "Training the Archer: Accelerating Student Changemaking Through Testing Assumptions," *MRU Institute for Community Prosperity*, accessed January 12, 2019, http://www.mtroyal.ca/cs/groups/public/documents/pdf/icp_trainingthearcher.pdf

176 Otto Scharmer, "Otto Scharmer on the Four Levels of Listening," *Threefold Consulting, Youtube video,* 8:25, November 23, 2015, https://www.youtube.com/watch?v=eLfXpRkVZaI

177 "School of Thought," *School of Thought,* accessed January 17, 2019, https://www.schoolofthought.org/

178 "Unconscious Bias Handout," *Enact Solutions,* accessed December 5, 2018, https://www.enactsolutions.com/ub/

179 "Dunning-Kruger Effect," *Wikipedia,* accessed January 12, 2019, https://en.wikipedia.org/wiki/Dunning%E2%80%93Kruger_effect

180 Catherine Wang, Pervaiz Ahmed, "Organizational learning: a critical review," *The learning organization*, 2003, 10 (1) pp. 8-17.

181 "Fail Forward," *Fail Forward*, accessed January 16, 2019, https://failforward.org/.

182 Amy Edmondson, "Strategies for Learning From Failure," *Harvard Business Review*, April 2011,: https://hbr.org/2011/04/strategies-for-learning-from-failure.

183 "Kumu," *Kumu,* accessed December 27, 2018, https://kumu.io.

184 "InsightMaker," *Insight Maker,* accessed December 27, 2018, https://insightmaker.com/

185 "Plectica," *Plectica,* accessed December 27, 2018, https://www.plectica.com/.

186 "Make Infographics that People Love," *Venngage, accessed January 7, 2019,* https://venngage.com.

187 "Canva," *Canva,* accessed December 27, 2018, https://www.canva.com/.

188 "Visio," *Microsoft,* accessed December 27, 2018, https://products.office.com/en-ca/visio/flowchart-software?rtc=1.

189 "LucidChart," *Lucidchart*, accessed December 27, 2018, https://www.lucidchart.com/.

190 "SimpleMind," *SimpleMind,* accessed January 7, 2019, https://simplemind.eu/.

191 "Icons for Everything," *Noun Project*, Accessed January 7, 2019, https://thenounproject.com.

192 "The Art of Concise Presentations," *Pecha Kucha,* accessed January 15, 2019, https://www.pechakucha.org/

193 "How to Make a Great Presentation," *TED, Video Playlist,* accessed January 12, 2019, https://www.ted.com/playlists/574/how_to_make_a_great_presentation.

194 "10 tips on how to make slides that communicate your idea, from TED's in-house expert," *TEDBlog,* July 15, 2014,: https://blog.ted.com/10-tips-for-better-slide-decks/

195 "Dynamic Public Speaking Specialization," *Coursera,* accessed January 14, 2019, https://www.coursera.org/specializations/public-speaking.

196 "Where Leaders are Made," *Toastmasters International,* accessed December 2, 2018, https://www.toastmasters.org/.

197 Linda Sweeney, "What Does It Take to Change the World—and are You Up for it?," *Linda Booth Sweeney,* July 31, 2016, http://lindaboothsweeney.net/blog/?tag=force-multiplier.

198 Daniela Papi-Thornton, "Tackling Heropreneurship," *Stanford Social Innovation Review,*February 23, 2016, https://ssir.org/articles/entry/tackling_heropreneurship.

199 Al Etmanski, "*IMPACT: 6 Patterns to Spread Your Social Innovation*," *Orwell Cove and Planned Lifetime Advocacy Network*, 2016, http://planinstitute.ca/learning-centre/publications/impact/

200 Dan Overall, "A Renaissance in Social Problem Solving: The Introspection and Inspiration of Al Etmanski," *Trico Charitable Foundation,* March 13, 2018, https://tricofoundation.ca/al-etmanski/

201 "Aligning Purpose with Masterful Action," *Strozzi Institute*, accessed January 18, 2019, https://strozziinstitute.com/.

202 "Organization and Relationship Systems Coaching," *CRR Global,* accessed January 20, 2019, https://www.crrglobal.com/.

203 "School for System Change," *School for System Change,* accessed January 13, 2019, https://www.forumforthefuture.org/school-of-system-change.

204 "The Systems Sanctuary," *System Sanctuary, accessed January 18, 2019,* http://systemsanctuary.com/.

205 "Getting to Maybe: Social Innovation," *Banff Centre for Arts and Creativity,* accessed January 21, 2019,: https://www.banffcentre.ca/getting-maybe-social-innovation.

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