Systems Thinking

Research Paper

Preface

"Many of the challenges we face today — from climate change to social inequality — are extremely complex. In 2018, Virgin Unite set up the NewNow, a collective of rising global leaders committed to tackling some of the toughest challenges for humanity and the planet.

Together with One Young World and The NewNow, Virgin Unite is committed to empowering the next generation of young leaders as they begin their journey to create a brighter, more sustainable future."

- Richard Branson, Virgin Group Founder

Author Profiles

Kamal Virk

Kamal holds a master's degree in International Relations from the London School of Economics (LSE). In 2021, he joined One Young World as part of the organisation's fellowship programme, graduating as a One Young World Ambassador at the Manchester Summit in 2022. Kamal now leads impact reporting at One Young World.

Lauryn Cloughley

Lauryn is a Senior Programmes Manager at One Young World, with a background in research, project management, and client relations. Her career with One Young World began in September 2021 as a Fellow, becoming an Ambassador following the 2022 Manchester Summit. Lauryn specialises in working with world-leading businesses and government organisations to develop global leadership programmes.

Our Organisation

One Young World is the global Community of young leaders. At the annual Summit, the brightest talent from every country and sector debate and devise innovative solutions to the world's most pressing issues. Every leader who attends leaves the Summit as a One Young World Ambassador and a valued member of our global Community. This is a lifelong membership to one of the most incredible networks in the world.

The NewNow is a One Young World program supported by Virgin Unite, empowering the boldest emerging young leaders to shift the paradigm for how leaders worldwide drive change through systems-thinking and collective action.

Definition

Sys·tems think·ing

/ˈsɪstəmz ˌθɪŋkɪŋ/

noun

An approach that emphasises the importance of considering all elements within an overall system—including a wide range of stakeholders, organisations, and entities—when tackling complex issues. It advocates for taking a cross-cutting and multilayered perspective rather than examining problems or elements in isolation. Systems thinking offers the most comprehensive route to building a fair and sustainable future for all.

Foreword
From Paul Polman

Chair of the One Young World Global Advisory Board; Co-Author of 'Net Positive'

As someone who has dedicated my life to fostering innovation and driving positive change, I am delighted to express my enthusiasm for supporting young leaders in becoming adept systems thinkers. The challenges facing our world today—from climate change and biodiversity loss to social inequality—are complex and interconnected. It is only by understanding these intricate systems that we can develop solutions that are both impactful and sustainable. I am convinced that equipping young leaders with the ability to think in systems will enable them to tackle these challenges with the creativity and resilience needed to drive lasting change.

This research paper outlines a theory of systems thinking and systems-based approaches, grounded in recent scholarship and emphasising the utility of a systems approach to solving global issues. Using case studies from One Young World's global community of young leaders, it provides an overview of what makes systems thinking successful, how its results can be measured, how it may be used to tackle future problems, and how it relates to Indigenous Knowledge Systems. It is a vital resource for nurturing a new generation of changemakers who can navigate and influence the multifaceted systems that shape our world. By fostering a holistic understanding of these systems, we can empower young leaders to create innovative solutions that address root causes rather than merely treating symptoms. This approach is crucial in our quest for a more equitable, sustainable, and prosperous future for all.

One Young World, with its unique platform for young leaders, is an exemplary partner for advancing systems thinking, and is the perfect home for the next stage of The NewNow. My own involvement with One Young World has shown me the immense potential and passion of its Ambassadors. This global community brings together the brightest young minds from across the world, providing them with the skills, knowledge, and networks they need to drive positive change. Over the past decade, my participation as a Counsellor, and my work as Chair of the Global Advisory Board, have been profoundly inspiring experiences. I have witnessed first-hand the transformative impact One Young World has on young leaders, turning their ideas into actionable projects that make a real difference. This partnership will ensure that systems thinking reaches the most dynamic and visionary young leaders, amplifying their impact on a global scale.

I would like to take this opportunity to acknowledge the incredible work that The NewNow has accomplished to date. Founded in 2018, this collective of rising global leaders are tackling some of the toughest challenges for humanity and the planet. Their dedication to fostering systems thinking among young leaders has already made a significant impact, laying a strong foundation for future progress. I extend my heartfelt gratitude to the Founding Leaders, whose vision and commitment have been instrumental in driving this initiative forward. Their efforts have not only empowered countless young minds but have also set a powerful example of leadership and innovation. Thank you for your unwavering dedication and inspiring contributions.

I firmly believe that the future belongs to those who can think systemically and act decisively. By supporting young leaders through initiatives focused on systems thinking, we are investing in a generation that will not only inherit the world but will also transform it for the better, through changing existing businesses and institutions, and building new ones. We are committed to guiding and empowering these leaders as they embark on their journey to create a brighter, more sustainable future.

Foreword
From the Founding Leaders of The NewNow

In a world defined by unparalleled complexity and interconnected challenges, understanding and navigating entire systems has become essential for young changemakers dedicated to creating a better future. Systems thinking offers a critical framework for grasping the intricate web of our global issues, revealing underlying patterns, and crafting strategies that address the root causes of these challenges.

The mission of The NewNow is to build the experience and capacity of rising leaders, developing a space for them to work together to champion social change. It does this by supporting and developing young people with proven track records to ensure that their voices are heard. As the Founding Leaders of The NewNow, systems-based approaches have informed our own work in promoting gender equality, human rights, biodiversity, education, and much more. We are thrilled to be partnering with Virgin Unite and One Young World to pivot The NewNow's focus towards systems change, recognising its transformative potential in deepening the impact of young leaders around the globe. Our commitment to this approach is reflected in the groundbreaking work of our Founding Leaders, each of whom exemplifies the power of systemic thinking in addressing diverse global issues.

This paper presents insights into the success of previous systems-based approaches, the relationship between systems thinking and Indigenous Knowledge Systems, the future of systems thinking, and the intricate relationship between systems-based approaches and social impact assessment. Through its case studies of One Young World Ambassador-led projects, it illustrates the value of systems thinking as an approach to global problems. These examples show the transformative potential of systems-based approaches, and offer inspiration to others pursuing meaningful change.

We believe that embracing systems thinking can lead to more innovative, resilient, and sustainable solutions. Our own experiences with creating social impact centre the necessity of systemic efforts and collective action. We invite readers to consider the interconnected nature of the systems we inhabit, and embrace proactive, adaptive systems-based strategies that anticipate and address future challenges. We hope that young leaders will read this paper, take inspiration, and apply to join the next cohort of The New Now - we can't wait to meet them and lend our support and mentorship.

As we advance The New Now's mission to embrace systems change, we are excited about the opportunity to support young leaders in developing innovative, resilient, and sustainable solutions. By applying systems thinking, we can enhance our ability to address interconnected issues such as the planetary crisis, global health, and social justice. The experiences of us, as Founding Leaders, illustrate the profound impact that systemic approaches can have, and we are committed to empowering the next generation of changemakers to harness this approach in their own transformative work.

Biographies
of the Founding Leaders of The NewNow

Abdalaziz Alhamza

Abdalaziz Alhamza has used his platform through Raqqa is Being Slaughtered Silently (RBSS) to expose the harsh realities of conflict and human rights abuses in Syria. His work underscores the importance of viewing political violence and human suffering through a systemic lens, highlighting how interconnected global conflicts and human rights violations can be effectively addressed through comprehensive advocacy and international awareness.

Farwiza Farhan

Farwiza Farhan's efforts to protect the Leuser ecosystem in Indonesia blend grassroots activism with high-level policy advocacy. Her success in tackling deforestation and species protection demonstrates how systemic thinking can integrate environmental conservation with legal frameworks, creating a robust strategy that safeguards vital ecosystems while addressing the root causes of environmental degradation.

Roya Mahboob

Roya Mahboob's transformative work in Afghanistan, through initiatives such as the Digital Citizen Fund and the Afghan Girls Robotics team, showcases the power of technology and education in empowering women and girls. Her approach exemplifies how systems thinking can connect educational opportunities, digital literacy, and entrepreneurship to create a supportive network that amplifies the potential of young women in underserved communities.

Victor Ochen

Victor Ochen's African Youth Initiative Network (AYINET) illustrates the impact of addressing the multi-faceted effects of conflict and displacement through a systemic approach. By integrating medical support, leadership training, and transitional justice, Victor's work exemplifies how a comprehensive strategy can foster recovery and resilience among survivors of violence and displacement.

Jaha Dukureh

Jaha Dukureh's leadership in combating female genital mutilation (FGM) and child marriage in The Gambia highlights the importance of grassroots advocacy combined with systemic reform. Her work through Safe Hands for Girls and The Big Sisters Movement demonstrates how systemic thinking can drive meaningful social change by addressing deeply entrenched cultural practices and empowering communities to advocate for themselves.

Uzodinma Iweala

Uzodinma Iweala's dual roles as a social entrepreneur and doctor emphasise the intersection of health, entrepreneurship, and cultural representation. His efforts in addressing health disparities and amplifying African voices showcase how systemic approaches can drive both social and economic progress, integrating diverse facets of development to achieve comprehensive impact.

Taylor Wilson

Taylor Wilson's pioneering research in nuclear physics and technology reflects the potential of systems thinking in advancing science and innovation. His interdisciplinary approach to solving complex scientific problems and exploring new technologies highlights how a systemic perspective can foster breakthroughs that address critical global challenges.

Content

Introduction

What is Systems Thinking?

One Young World's work on systems thinking will focus on two key elements: diverse actors and agencies, and intersecting thematics.

Diverse Actors and Agencies

This approach recognises that diverse actors, from individuals to institutions, play crucial roles in shaping the dynamics of a system. By mapping out these interactions and relationships, systems thinkers can identify leverage points, potential synergies, and conflicting interests. For instance, in public health, systems thinking involves examining the roles of healthcare providers, policymakers, patients, and social determinants of health to develop comprehensive strategies for improving health outcomes.[1]

Intersecting Thematics

Systems thinking also facilitates a deeper exploration of complex issues by focusing on the intersections of various thematic elements. This approach encourages the integration of diverse perspectives and disciplines, allowing for a multifaceted understanding of problems. In healthcare, addressing chronic diseases involves intersecting themes of medical treatment, patient behaviour, socio-economic factors, and healthcare policy. Systems thinking integrates these diverse elements, leading to more effective and sustainable health interventions.[2]

An example of this is the planetary boundaries framework developed at the Stockholm Resilience Centre, which provides quantitative parameters within which human societies can flourish without causing considerable environmental damage. The nine boundaries are:

- climate change - increased concentrations of greenhouse gases in the atmosphere.
- biodiversity loss - the extinction of animal and plant species.
- biogeochemical flows - key nutrients, including nitrogen and phosphorus, and their cycles through the environment.
- ocean acidification - increased atmospheric carbon dioxide dissolving in the oceans lowers ocean pH.
- land system change - the transformation of land use and cover, including through agriculture, infrastructure, and deforestation.
- freshwater use - the consumption and management of freshwater resources.
- atmospheric aerosol loading - airborne particles that have implications for human health and the environment.
- stratospheric ozone depletion - this refers to the thinning of the ozone layer in the stratosphere.
- novel entities - these are new substances or materials that can accumulate in the environment over time.

These nine boundaries are interconnected, such that crossing one boundary can have negative outcomes for the other boundaries in the framework. This in turn can lead to cascading effects that contribute to increased planetary risk overall.

[1] Meadows, D.H. (2008). *Thinking in Systems: A Primer.* Chelsea Green Publishing.
[2] Senge, P. M. (2006). The Fifth Discipline: The Art & Practice of The Learning Organisation.

One Young World's Definitions

One Young World has adopted two definitions to help young leaders understand their social impact through a systems lens, acknowledging the complexity and interconnected nature of global challenges. The first definition emphasises the immediate, tangible effects of individual projects or initiatives, allowing young leaders to gauge their direct contributions to specific issues such as poverty, education, or health. The second definition broadens the perspective to consider the systemic implications of these initiatives, encouraging young leaders to understand how their actions influence and are influenced by larger, interconnected systems. This approach is particularly valuable in fields requiring interdisciplinary collaboration, as it facilitates a deeper exploration of complex issues by focusing on the intersections of various thematic elements.[3]

Why Systems Thinking is Essential

In an increasingly interconnected world, the challenges we face are complex and multifaceted, necessitating solutions that go beyond traditional, isolated approaches. Issues such as climate change, social inequality, and global health crises are intricately linked, demanding systems-based approaches that consider the interplay of various factors and actors within a larger context. Short-term approaches, which focus narrowly on immediate gains or isolated outcomes, have proven detrimental to both the environment and social justice. These approaches often lead to unsustainable practices that deplete natural resources, exacerbate inequalities, and fail to address the root causes of problems.[4]

A systems-based approach recognises the importance of understanding and addressing the interconnected nature of these challenges. It involves mapping out the relationships and interactions between different elements within a system, whether they be environmental, social, economic, or political. **This holistic perspective allows for the identification of leverage points where interventions can have the most significant impact** and can help in designing strategies that are sustainable and equitable.[5]

Moreover, systems approaches are innately inclusive because they involve all relevant parties in the process of understanding and addressing issues. By incorporating the perspectives and expertise of diverse stakeholders, including marginalised communities, these approaches ensure that solutions are more equitable and reflective of the needs and realities of all those affected.[6]

Why Systems Thinking Has Been Neglected

Systems thinking has often been neglected in addressing global challenges due to several interrelated factors. Historically, business, government, and civil society have operated in silos, focusing on sector-specific goals without adequately considering the broader interdependencies that link their activities. This compartmentalised approach has limited the effectiveness of solutions, as it fails to address the interconnected nature of many issues such as climate change, social inequality, and public health.[7]

Additionally, the rise of professional specialisation, driven by increased technical complexities in various fields, has further entrenched this siloed mentality. Professionals often develop deep expertise in narrow domains, which, while beneficial for advancing specific areas of knowledge, can hinder holistic understanding and collaboration across disciplines. This specialisation can create barriers to integrating diverse perspectives, a fundamental aspect of systems thinking.[8]

Moreover, systems thinking is time and resource-intensive, making it less appealing in contexts where "quick wins" are prioritised. Policymakers, funders, and business leaders

[3] Meadows, (2008).
[4] Capra, F. & Luisi, P.L. (2014). The Systems View of Life: A Unifying Vision. Cambridge University Press.
[5] Meadows, (2008).
[6] Senge, (2006).
[7] Edwards, M. (2011). *Civil Society*. Polity Press.
[8] Flood, R.L. (2010). Rethinking The Fifth Discipline: Learning within the Unknowable. Routledge.

frequently seek immediate, measurable results to satisfy stakeholders, often at the expense of long-term sustainability and systemic solutions. This focus on short-term gains can lead to the implementation of solutions that do not address the root causes of problems and may even exacerbate existing issues over time.[9]

Activists, driven by passion and lived experience, play a crucial role in advocating for change. However, they may lack access to the broader resources and comprehensive frameworks necessary for implementing systems-based approaches. Their efforts are vital, and their effectiveness can be strengthened through integration of wider systemic perspectives and support.[10]

Furthermore, systems thinking is frequently viewed as academic and theoretical, seemingly divorced from practical application in the field. This perception can deter its adoption, as practitioners may struggle to see its relevance to immediate, on-the-ground challenges. The complexity and abstract nature of systems methodologies can appear daunting, leading to a preference for more straightforward, conventional approaches.[11]

Why One Young World and The NewNow Are Focusing on Systems Thinking

The relevance of systems thinking for young people, One Young World, and The NewNow is particularly significant given the increasingly interconnected nature of contemporary challenges. Climate change, social inequality, and global health crises require holistic, collaborative approaches for effective resolution.[12]

One Young World, as an ecosystem

in itself, exemplifies the power of fostering collaboration across traditional boundaries. By bringing together young leaders from diverse backgrounds and sectors, One Young World facilitates the exchange of ideas and strategies, breaking down silos that often hinder comprehensive problem-solving.[13] This collaborative environment equips young leaders with a broader perspective, enabling them to identify and leverage synergies between different fields and stakeholders. This is critical to navigating the complexities of modern challenges, which rarely conform to the confines of a single discipline or sector.

Instilling young changemakers with knowledge of systems thinking empowers them to take more sustainable, effective action. **Understanding the systemic nature of global issues enables young leaders to design interventions that address root causes rather than just symptoms, leading to more lasting, impactful solutions.** This approach not only enhances the effectiveness of their initiatives but also ensures that these initiatives contribute to long-term systemic change, aligning with the broader goals of sustainability and equity.[15]

The NewNow underscores the importance of systems thinking by evolving into a community of next-generation 'systems leaders' from the global south. The NewNow, in partnership with One Young World, selects a diverse group of leaders each year who are passionate advocates for systems thinking and intersectionality. This tailored experience and peer-support community is designed to build their confidence, skills, and influence as systems leaders, enabling them to inspire other young leaders and influence established power holders.[16] The NewNow's distinct brand and mission, supported by One Young World's ecosystem and partnerships, offers young leaders access to resources, credibility, and platforms to advocate for a new

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[9] Senge, (2006).
[10] Edwards, (2011).
[11] Flood, (2010).
[12] Meadows, (2008)
[13] Senge, (2006).
[14] Edwards, M. (2011). *Civil Society.* Polity Press.
[15] Flood, R.L. (2010). Rethinking The Fifth Discipline: Learning within the Unknowable. Routledge.
[16] Senge, (2006).

leadership paradigm.

Moreover, it is particularly important for young people to embrace systems thinking as traditional educational frameworks typically focus on specialised knowledge and isolated problem-solving, leaving gaps in the ability to think systemically. By incorporating systems thinking, young leaders are better prepared for careers that are more purposeful and more effective in addressing complex global issues. This comprehensive skill set enhances their professional opportunities and equips them to make meaningful contributions to society, fostering a sense of purpose and fulfilment in their careers.[17]

In summary, the application of systems thinking is highly relevant for One Young World and The NewNow. It equips young leaders with the tools to understand and address the interconnected nature of contemporary challenges, fosters collaboration, and promotes sustainable, effective action. Embracing this approach is essential for developing the next generation of leaders who can navigate and transform the complex systems that define our world.[18]

Purpose and Power: The Highest Leverage Points for Systems Thinking and Approaches

Of the twelve leverage points for change in a system, the highest impact and often least addressed are purpose and power, which go hand in hand. Systems thinkers need to consider how the overarching and accepted goals of the system, as well as existing power structures and dynamics, can drive or hold back change. Building on Meadows' work, recent global research by Big Change in the field of education and systems innovation, emphasises the importance of these interlinked drivers in truly transforming, not merely incrementally improving, the systems

around us. If system transformation is the goal then work needs to happen at these points of stronger leverage, which concern culture, beliefs and values, and which require a different approach.

Within systems, power shows up in complex ways and takes different forms. It is both explicit and implicit and can work for good or bad. For young leaders looking to address complex social issues, the impact of these power dynamics can be very real, for the simple reason that through their leadership they are challenging accepted power structures. Considering how to unite generations as part of systems thinking and approaches is one way to build more inclusive solutions that tap into diverse perspectives and experiences. Intergenerational collaboration is an approach that recognises the potential of youth ideas and leadership to address global challenges, and advocates for more inclusive processes that bring different age groups together to work meaningfully and productively.

At its core, Intergenerational Collaboration and Leadership (ICL) reframes the way we view age and experience. It champions the perspective that everyone, irrespective of their age, can be both a teacher and a learner, a leader and a follower. It doesn't position youth only as beneficiaries of systems crafted by older generations; it's about recognizing every individual as an active designer, contributor, and stakeholder in societal constructs. **ICL acknowledges that every generation offers unique insights into our ever-changing world, and that transformative ideas are yet to emerge.**

"Fresh eyes are always important regardless of age. It's really terrific to have a lot of knowledge and experience in a field. But very often, real advances come, real progress comes when someone takes a fresh look. They don't just assume that the way it is today is the way it always was and the way it always will be." – William Pollard

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[17] Sterling, (2001).
[18] Capra & Luisi, (2014).

Chapter 1: How is Systems Thinking Used Today? Where is it Being Used Successfully and Where is it Being Underutilised?

There are many examples where systems thinking is used in public policy as well as the business world to address the long term causes of problems rather than a siloed approach of dealing with the problems themselves - and the inevitable fallout caused. In this chapter we will explore three key areas where systems thinking is having a positive impact as well as the challenges that remain.

Key Principles of Systems-Based Thinking:

First, we will look at the key tenets of a successful approach to systems thinking.

Interconnectedness

Systems thinking emphasises that all parts of a system are interconnected. Changes in one part of the system can affect other parts, often in unexpected ways. Recognising these interconnections helps in understanding the complexity of systems and predicting potential outcomes of changes.[19, 20] This core principle is particularly important in the fields of healthcare, more specifically, preventative healthcare.

Holistic View

This principle involves looking at the system as a whole rather than focusing on individual parts. By taking a holistic view, one can better understand how different components interact and influence each other.[21] For instance, urban planners use a holistic approach, thinking about the impact of key services such as drainage and transport, when planning new housing.

Feedback Loops

Feedback loops are crucial in systems thinking. Positive feedback loops amplify changes, while negative feedback loops counteract changes. Understanding these loops helps in managing and predicting system behaviour.[22]

Nonlinearity

Systems often exhibit nonlinear behaviour, where small changes can lead to significant effects.[23] More commonly referred to as the Butterfly Effect, this principle acknowledges that outcomes are not always proportional to inputs.

Systems Mapping and Modeling

Creating visual representations or models of systems helps in understanding their structure and dynamics. These tools assist in identifying key leverage points and predicting the effects of changes. For example, system dynamics models are used in climate change research to simulate and understand the interactions between atmospheric components.[24]

[19] Meadows, D.H. (2008). *Thinking in Systems: A Primer.* Chelsea Green Publishing.
[20] Senge, P. M. (2006). The Fifth Discipline: The Art & Practice of The Learning Organisation.
[21] Kim, D. H. (1999). Introduction to Systems Thinking. Pegasus Communications.
[22] Meadows, D. H. (2008).
[23] Sterman, J. D. (2000). Business Dynamics: Systems Thinking and Modeling for a Complex World. McGraw-Hill Education.
[24] Redivo, F. (2021) System Dynamics for Climate Change Mitigation, Systems Dynamics Society: https://systemdynamics.org/system-dynamics-for-climate-change-mitigation/

Leverage Points

Leverage points are specific places within a system where a small shift can lead to significant changes. Identifying and utilising these points can make interventions more effective.[25]

Boundaries

Defining system boundaries is crucial in systems thinking. These boundaries help in focusing the analysis and understanding which elements to include or exclude.[26] For instance, when studying an ecosystem, setting boundaries around a specific area, like a forest, helps in concentrating on relevant environmental factors and species interactions.

Where is Systems Based thinking being used today?

Public Health

Public health is one of the key areas of human development where systems based approaches have the potential to save millions of lives, by treating the environmental causes of ill health before crisis points are reached.

Implementing these approaches are often controversial as they come up against one of the greatest barriers to systems based thinking, human reluctance to deviate from traditional practices and wisdom.

For example, increasing evidence suggests that while funding for AIDS, TB, and Malaria does save lives, it often lacks the necessary support for strengthening health systems to ensure sustainable benefits. Furthermore, it is argued that these targeted funding mechanisms, which focus on specific diseases, might hinder progress towards achieving comprehensive, high-quality, and inclusive health systems in the long term.[27]

This evidence goes against the grain of traditional funding models, particularly in the Global South, where money is provided to deal with specific illnesses. Even when this funding has enhanced health system components related to service delivery in disease prevention and control, such as targeted on-the-job staff training, recent research indicates that the selective nature of these strengthening strategies has sometimes been unsustainable, disruptive, and redundant. This has placed significant strain on an already limited and overburdened health workforce.

A successful example of how systems thinking has changed this approach is in relation to tobacco. For example, the National Cancer Institute in the United States funded a project to explore the application of systems thinking in tobacco control and public health. Utilising various systems-oriented approaches and methodologies, the project was a transdisciplinary initiative that connected tobacco-control stakeholders with systems experts. The report prompted a series of exploratory projects and case studies to evaluate the potential of systems thinking in tobacco control.[28]

Since this report, more and more countries have taken a preventative approach to tackling the illnesses linked to smoking, implementing policies such as restrictions on advertising, increased taxation, and in some cases, generational smoking bans.

One Young World Ambassadors are working tirelessly to promote good health and wellbeing by tackling the underlying issues that damage health outcomes in communities across the Global South.

Shah Rafayat Chowdhury is improving public health in Bangladesh through clean water access, climate mitigation, and innovative solutions to humanitarian disasters (see page 17).

[25] Meadows, D. H. (2008)
[26] Senge, P. M. (2006). The Fifth Discipline: The Art & Practice of The Learning Organisation.
[27] WHO Report (2009), Systems based thinking for health systems strengthening.
[28] Best A et al. (2007) Greater than the sum: Systems thinking in tobacco control. Bethesda, MD, National Cancer Institute, US Department of Health and Human Services, National Institutes of Health

The COVID-19 Pandemic

The COVID-19 pandemic brought into stark reality the importance of systems interconnectedness. It also proved to be a crucial leverage point to implement wholescale systems-based changes to public health.

As a health-care issue, the COVID-19 pandemic resulted in unprecedented impacts on all domains of life – economy, entertainment, transport, education, adult social care and mental health. Additionally, it highlighted another critical domain in the systems thinking mindset – the domain of 'unintended consequences'.[29]

Given the unprecedented nature of the pandemic, many countries opted for different systems-based approaches to mitigate the spread of the virus, thus reducing the number of people needing hospitalisation, and ultimately reducing the number of fatalities. Now almost three years post-pandemic, organisations such as the World Health Organisation (WHO) are analysing the various methods deployed to ensure future pandemic preparedness.[30]

The indications are extremely clear. Countries that took a systems-based approach to COVID-19 were more successful at mitigating the spread of the virus. Evidence from multiple countries has shown that employing a systemic-approach, such as quarantines, especially if implemented promptly, were effective in reducing patient numbers and fatalities.[31]

One Young World's young leaders are acutely aware of the direct link between education and preventative healthcare. Edmilson Angelo is one such leader (see page 18).

The Criminal Justice System

Criminal justice systems are complex networks comprising policing, prosecutors, defenders, and the broader judiciary. Each component both influences and is influenced by the others, while the complexities and benefits of these systems inevitably also extend beyond their own boundaries into wider society. Addressing modern crime and societal expectations on punishment versus restorative justice requires a nuanced approach. The latter emphasises accountability and rehabilitation for offenders, repairing harm caused to victims, and the active involvement of communities. Systems thinking, with its capacity to understand and tackle the complexities of the criminal justice system, emerges as a powerful tool in this respect. It provides a holistic perspective that recognises the interdependencies within the system, fostering innovative and sustainable solutions. This potential for positive change should inspire hope and optimism in our collective efforts to reform the criminal justice system.

However, the siloed nature of the criminal justice system often hinders the sharing of insights and best practices that could lead to better outcomes.[32] Applying systems thinking in the criminal justice system shifts the focus from piecemeal solutions to holistic reforms. It necessitates a cultural shift within governmental and policing bodies to prioritise continuous learning, adaptation, and collaboration.

By embracing this approach, we can develop policies and practices that are not only just and fair but also effective and resilient. This transformative shift is essential for addressing the complexities of crime and justice in the 21st century. It challenges us to rethink traditional approaches and strive for a criminal justice system that truly serves society's needs, emphasising prevention and fairness.

One of the areas where this systems-based approach has proved most effective in recent years is the link between custodial sentences for young offenders and the levels of rehabilitation versus their re-entry into the criminal justice system. Whilst by no means can systems thinking claim it has

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[29] WHO, A Systems Thinking approach for responding to the COVID-19 pandemic: https://www.emro.who.int/emhj-volume-26-2020/volume-26-issue-8/a-systems-thinking-approach-for-responding-to-the-covid-19-pandemic.html#
[30] Ibid.
[31] Nussystems-based approachumer-Streit B, Mayr V, Dobrescu AL, Chapman A, Persad E, Klerings I, et al. Quarantine alone or in combination with other public health measures to control COVID-19: a rapid review. Cochrane Database Syst Rev. 2020. (https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD013574/full)
[32] Embracing Systems Thinking in the Criminal Justice System: A Call for Holistic Reform (2024) https://www.leedstrinity.ac.uk/blog/blog-posts/embracing-systems-thinking-in-the-criminal-justice-system-a-call-for-holistic-reform.php

solved the problem entirely, we are seeing more countries move away from immediate custodial sentences for young offenders.[33]

For example, we have seen in the US a move in reforming school discipline practices that criminalise young people for petty offences, such as school truancy. Moreover, another effective reform strategy has been referring young people to alternative community-based programmes and services, thus focusing on restorative justice and keeping young offenders out of the prison system.[34]

This commitment to tackling the root causes of young people getting caught up in the criminal justice network is championed by many within the One Young World Community, including Oluwafunke Adeoye (see page 19).

Regenerative Agriculture

Agriculture is an integral part of some of the biggest issues facing our global society. Food security, the climate and ecological crisis, the loss of nature crisis, the water crisis, and deforestation all to a greater or lesser degree are impacted by the way we produce our food.

If we were to just look at food security through the prism of soil health, the picture is indeed very concerning. Soils across Europe have been degraded, in part due to conventional farming methods and recent estimates on soil make for troubling reading in terms of sustainable food production. A 2020 review found that only 30-40% of Europe's soils are healthy.[35]

Regenerative agriculture, therefore, is one of the most prominent forms of systems thinking when it comes to reversing degradation, specifically because it takes the holistic approach of seeing the improvement of soil quality as part of a wider picture of environmental revitalisation. Moreover, the potential environmental benefits of healthy soil go beyond just food security, as soil health can contribute to flood prevention, climate regulation through carbon sinking,

improved biodiversity systems, and perhaps most important of all, nutrient provisioning and improving water availability.[36]

However, regenerative agriculture may seem like one of the most obvious and straight forward systems-based approaches to implement, the complexities of the changes needed highlight the barriers for farmers in undergoing this process. This example demonstrates two of the biggest challenges to systems thinking, namely, complexity and cultural resistance.

When considering a shift to regenerative agriculture, (looking through the prism of complexities and resistance), the primary decision farmers face is the balance between risk and reward. Research indicates that increased uncertainty correlates with heightened risk. Given the challenge of current economic conditions, the risk associated with adopting new practices is particularly high for farmers. Moreover, many benefits of regenerative agriculture, such as improved productivity, only become evident over an extended period. Many farmers cannot afford to wait years to see the benefits of such business model changes.[37]

A central issue is that transitioning to regenerative agriculture entails a comprehensive business model overhaul, prioritising soil health as the primary objective. Therefore, the perceived advantages of making this switch are often insufficient or too delayed to justify the risk and uncertainty involved.

Many of One Young World's leaders work in the regenerative agriculture sector. For example, Akatale on Cloud, founded by Frank Mugisha, is using black soldier fly farming technology to combat soil degradation, and provide an alternative and sustainable source of animal feed.

The organisation has so far transformed more than 60,000 tonnes of food waste into organic fertilisers that enrich local soils in Uganda. It has also generated 350,000

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[33] Chavis, D. Using Systemic Thinking to Transform Juvenile Justice in the United States (2013) https://communityscience.com/blog/using-systemic-thinking-to-transform-juvenile-justice-in-the-united-states-2/
[34] Ibis.
[35] Bolton, M. (2023) A Systems Thinking Perspective on Regenerative Agriculture: https://thefarmingforum.co.uk/index.php?resources/a-systems-thinking-perspective-on-regenerative-agriculture.1602/
[36] Ibid.
[37] Ibid.

kilogrammes of protein larvae for livestock feed. Akatale on Cloud is eliminating 300 kilogrammes of methane emissions everyday by reducing food waste. It is empowering 1,560 farmers with skills to increase food production and manage biowaste, while creating a digital e-commerce marketplace for farmers and retailers to ensure more efficient transportation and avoid food wastage.

By providing communities with an easily-accessible and regular supply of organic fertiliser, Akatale on Cloud is influencing local food systems. The organisation is also changing the risk-reward incentive structure for farmers through its products and e-commerce platform, thereby encouraging the adoption of organic fertilisers that can prevent soil degradation.

The widespread adoption of regenerative agricultural practices, that consider the effects of food production on soils and biodiversity, requires collaborative efforts between small, innovative companies like Akatale on Cloud and global food conglomerates. Through a collective approach to the problem, regenerative practices can be embedded within food supply and value chains at scale. This could also help offset transitional risks faced by farmers through risk-sharing and making financial resources like bank loans and insurance more readily available to them. It can also provide farmers with additional technology and soil monitoring tools to ensure the most effective outcomes possible, while upskilling farming communities.

CASE STUDY:
FOOTSTEPS BANGLADESH

Shah Rafayat Chowdhury
🇧🇩 Bangladesh

Footsteps Bangladesh uses an integrated and human-centric model that is empowering marginalised communities in tackling social challenges such as access to clean water, public healthcare, livelihood enhancement and climate action. Bangladesh is particularly susceptible to climate disaster as a result of its exposure to tropical cyclones. The country currently ranks 9th out of 193 countries in the 2023 WorldRisk Index, due to its exposure, vulnerability, and lack of adaptive capacities.[38]

Since its founding, Footsteps Bangladesh has taken strides to integrate long-term systemic approaches into its developmental work. Shah Rafayat Chowdhury, the organisation's Co-Founder, was eager to move away from a traditional nonprofit framework dependent on donor agency, siloes, and timeframes that prioritise short-term success. Instead, his solutions not only solve immediate community challenges, but also develop local capacity to ensure long-term sustainability across a wide range of climate and developmental issues. **This approach bypasses the problem of heightened professional specialisation and its silos, while recognising the multifaceted nature of the problems affecting underserved communities in Bangladesh.** Footsteps Bangladesh is a successful example of a systemic approach to change, working across a broad range of interdependent, causal issues.

Footsteps Bangladesh has impacted 622,510 people to date; 411,848 through its water and sanitation solutions and 42,789 directly through improved public health infrastructure and services. The organisation has empowered 41,637 people with climate adaptation and mitigation solutions, and 42,633 people with entrepreneurial and

vocational skills to improve economic outcomes. It has also developed a portable filter, the Dreamwater Portable Filter, which has crucially converted 450,000 litres of floodwater into drinking water in flood-prone regions of Bangladesh. The organisation has developed a disaster resilience bag for people to safely store valuables during periods of flooding or environmental disasters.

Footsteps Bangladesh has also engaged extensively in advocacy, with awareness campaigns, volunteer training, and outreach events, including workshops and consultations. The organisation is training local communities in project maintenance. Footsteps Bangladesh targets local institutions to engage and mobilise communities in key development areas. It is integrating solar power and waste segregation, and has trained 2,000 young people through its Changemaker Development Programme.

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[38] Frege, I.A. (2023). WorldRiskReport 2023. Bündnis Entwicklung Hilft, Ruhr University Bochum – Institute for International Law of Peace and Armed Conflict (IFHV): https://weltrisikobericht.de/wp-content/uploads/2023/10/WRR_2023_english_online161023.pdf

CASE STUDY:

CHANGE 1'S LIFE

Edmilson Angelo

Angola

Change 1's Life was founded by Edmilson Angelo to provide comprehensive developmental solutions to rural Angolans. It does this by tackling several issues linked to rural poverty, emphasising the holistic improvement of socio-economic conditions through education. Change 1's Life's work at the intersection of poverty reduction and development is filling the gaps in the country's education and health infrastructure.

Edmilson began Change 1's Life working on small-scale education projects in rural areas and providing access to sustainable light sources to discourage kerosene use and pollution. The organisation has since scaled its impact significantly, working to transform rural communities in Angola through the creation of 'digital and ecological villages', turning rural areas into small, smart and green cities. These villages provide rural underprivileged communities with resources to increase positive educational outcomes, while ensuring proper access to healthcare, clean water, adequate nutrition and electricity. These additional factors can significantly reduce educational attainment if left unchallenged.

Change 1's Life has converted dozens of shipping containers into community-centred buildings, including a medical centre that provides regular health checkups. It has also provided ambulances and, during the COVID-19 pandemic, was responsible for an increase in vaccine uptake. Similarly, it installed a mobile food bank and handwashing station to ensure that rural residents were properly prepared and supported. The organisation has distributed over 500,000 kilogrammes of clothing throughout Angola and Namibia, offering adequate protection against unpredictable weather conditions to people experiencing homelessness, orphanages, schools, street vendors, and underprivileged families.

Change 1's Life takes a holistic approach to education, ensuring that children learning through its programmes have access to food and clean water, bursaries, uniforms, and digital equipment. It is providing children with disabilities with wheelchairs and other resources. In one particular community, Santa Amboleia in the province of Bengo, Edmilson's team have operationalised agricultural projects to build a sustainable food supply to advance local developmental outcomes. It has launched the first ever social franchise brand helping young people start businesses in urban areas, using their brand and resources to combat unemployment while promoting innovation and inclusion.

Through these many interrelated programmes, Edmilson is tackling the problem of poor educational outcomes and the problems of poverty and underdevelopment that contribute to it. This systemic approach is grounded in the pragmatic realities of development, and offers long-term, workable solutions to lift people out of poverty while protecting the environment.

CASE STUDY:

HOPE BEHIND BARS AFRICA

Oluwafunke Adeoye

🟩⬜🟩 Nigeria

Hope Behind Bars Africa is addressing inequalities in Nigeria's criminal justice system by advocating for reform and centring the dignity and rights of the individual. Founded by Oluwafunke Adeoye, the organisation is tackling systemic injustice and advocating for an effective, supportive correctional environment through its 'Prevent, Provide and Preserve' model.

By collaborating with all sectors of the criminal justice system and community leadership to advocate for systemic reform, Hope Behind Bars Africa is preventing unnecessary entry into the criminal justice system, and providing pro bono services to resolve criminal cases, and rehabilitate and empower people. .

Hope Behind Bars Africa is co-designing and implementing state-driven policy reforms to prevent people falling into the criminal justice system, and promoting alternatives to imprisonment. Its Death Penalty Program is working to abolish the death penalty in Nigeria through capacity-building and advocacy work. Its Inside-Out Hub is committed to rehabilitation by skill-building activities and education within prisons. Finally, the Aisha Justice Program produces and leverages research on gender disparities within the country's criminal justice system to influence policy changes.

Hope Behind Bars has so far directly impacted over 8,500 people. Of these, several hundred people have received free direct legal support, while thousands have gone through the organisation's welfare intervention, skills empowerment and reintegration programmes. In partnership with the Cornell University Centre on the Death Penalty, Hope Behind Bars has provided capacity-building training to 200 lawyers and law students. It has also created legal awareness training for individuals, while Oluwafunke has co-

authored learning resources for pro bono lawyers. The organisation has developed an app to connect lawyers with pro bono work, facilitating 1,200,000+ hours of pro bono legal service so far. Since its founding, Hope Behind Bars has saved over 200,000 hours of prison time for the wrongly incarcerated and has cut time spent awaiting trial by 50%.

Under Oluwafunke's leadership, Hope Behind Bars Africa is engaging all sectors of society to advocate for and advance a systemic overhaul of Nigeria's criminal justice system at every level, from focussing on individual rehabilitation efforts to death penalty abolition and research activities. Oluwafunke has also partnered with the Nigerian Ministry of Justice and the country's Legal Aid Council to champion the rights of people suffering false imprisonment.

Chapter 2: The Future of Systems Approaches

Introduction

The world is increasingly interconnected and these connections will only strengthen, while the challenges we face will likewise only increase in complexity. Solutions must reflect and address this complexity in order to be successful. This chapter will explore two distinct premises to establish the suitability of systems-based approaches for addressing the challenges of the future.

Firstly, how effective systems-based approaches are at addressing the anticipated, prominent challenges of the coming years, in an ever more complex and interconnected world. The key principles of a 'holistic view' and 'interconnectedness' from chapter one are central to this consideration.

The second premise is how effective systems-based approaches are at creating long-term social impact, due to their inherent consideration of sustainability. This is underpinned in particular by the principles of the feedback loop, and systems mapping and modelling as outlined in chapter one.

Defining the prominent challenges of the future

To assess the suitability of systems-based approaches for the future, we must first identify the social impact challenges that will continue to be prominent threats, as well as those that will emerge as new, significant challenges requiring novel solutions.

For this research paper, we have limited our scope to exploring how systems-based approaches can effectively address the climate crisis, mass displacement, and disruptive technology. The first two are archetypal examples of challenges that are prevalent today, but anticipated to accelerate exponentially in the future. Disruptive technology, on the other hand, is both a challenge and an opportunity simultaneously. It can contribute to systems thinking but also present new difficulties and risks that need to be addressed through systemic approaches.

This is not an exhaustive list of the challenges that will persist or arise, nor can we assert that these are the three most singularly important challenges requiring solutions. Instead, by demonstrating the importance of systems-based approaches in dealing with these specific social impact challenges, this list exemplifies the relevance of systems thinking for both the short and long term future.

Leveraging interconnected elements creates sustainable impact

It is a common assertion that the climate emergency and wider planetary crisis is the most pressing threat to the long-term future of humanity. However, despite overwhelming scientific consensus and widespread civil and political support for addressing the climate crisis, the UNEP has decried the "broken record" of ever-increasing temperature highs and the widespread failure to cut emissions.[39] Similarly, the planetary boundaries framework, designed to quantify the limits within which human societies can function without triggering irreversible environmental changes, has determined that as of 2023 six of the nine boundaries have been crossed.[40]

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[39] United Nations Environment Programme. (2023) *Emissions gap report 2023.* Available at: https://wedocs.unep.org/bitstream/handle/20.500.11822/43922/EGR2023.pdf?sequence=3&isAllowed=y
[40] Stockholm Resilience Centre (n.d.) Planetary Boundaries. Available at: https://www.stockholmresilience.org/research/planetary-boundaries.html

This past and present failure to address the causes of the crisis means that the future is likely to be dominated by a variety of interconnected environmental challenges. Therefore, demonstrating how a systems-based approach can rectify these failings is a clear indication of its suitability for future social impact challenges.

At the root of the climate crisis is the lack of a coherent and coordinated approach that addresses the systemic and not just solitary elements of the challenge. Decarbonisation, as the overarching ambition of the climate response, requires "rapid and coordinated action at scale".[41]

Examining one element within the climate emergency, plastic pollution, demonstrates the need for a systemic and coordinated approach. Plastic pollution is generated by corporate supply chains, the behavioural norms of consumer society, and governmental policy. The systems map produced by ReImagined Futures illustrates the intricacy and complexity of the challenge within the context of the Mediterranean.[42]

For example, the map shows how citizen awareness and education on sustainability does not just impact societal behaviour, and the subsequent demand for single use plastics, but also creates citizen engagement with the problem of plastic pollution. This increases pressure on governments to create new public policies, and encourages business investment in sustainable alternatives.

Therefore, a systems-based approach that can anticipate and exploit the interactions between the various actors that comprise a system can in turn create wide-ranging and long-lasting solutions. One Young World Ambassador Orlando Anaya's organisation, Kilomtro Uno, takes such an approach in a different geographic context, leveraging similar interconnective elements (see page 26).

By launching the first comprehensive educational programme on ocean pollution for young people in Mexico, Kilometro Uno

has successfully changed the behaviour of thousands of people and reduced the demand for plastic. This vital work further boosts participation in Kilometro Uno's plastic collection activities, through which the organisation mobilises civil society to prevent plastic pollution entering the ocean. By creating a movement of active, engaged and educated citizens, Kilometro Uno has been able to more effectively lobby local governments to prohibit the supply of plastic bags.

Kilometro Uno's work is indicative of how systems-based approaches can be utilised to tackle the burgeoning challenges of the climate crisis. By engaging multiple, distinct actors operating within the system and exploiting their interdependent relationships, the organisation is able to create effective long-term impact on the plastic pollution crisis.

Another One Young World Ambassador, Farwiza Farhan, applies a systems-based approach to biodiversity and forest conservation in Indonesia's Aceh province (see page 29). Her organisation, HAkA, has been instrumental in leveraging the country's legal system to halt palm oil concessions and illegal activity in the Leuser ecosystem. HAkA combines this with extensive community outreach, environmental education, and policy advocacy.

Farwiza is also a Founding Leader of The NewNow, and contributes her exceptional knowledge on sustainability issues to that movement of young changemakers. In turn, The NewNow has helped Farwiza extend her voice on sustainability issues globally, and connected her with other young leaders to develop a collaborative approach to systemic issues.

Understanding connections with more urgent elements incentivises action

Understanding the interconnected elements

[41] Royal Academy of Engineering. (2023) *Net zero: a systems perspective on the climate challenge.* London: Royal Academy of Engineering. Available at: https://raeng.org.uk/media/b4jpdttw/net-zero-a-systems-perspective-on-the-climate-challenge-final-nepc.pdf.
[42] ReImagined Futures. (2021) *Macro-plastic pollution in the Mediterranean Sea.* Available at: https://reimagined-futures.kumu.io/macro-plastic-pollution-in-the-mediterranean-se

of a system is a prerequisite for a systems-based approach, and can also increase the visibility of a future challenge and the immediacy with which it is treated. This can overcome one of the key obstacles that has hampered urgent action on future challenges such as the climate crisis, where tipping points can result in irreversible damage.

The climate crisis is a challenge where complacency has culminated in failure to coordinate an effective response. There is a dangerous sentiment that the climate emergency is an issue primarily for future generations, which overlooks the immediate environmental consequences experienced by, and threatening, vulnerable populations particularly in the Global South. However, such sentiment also ignores the complex labyrinth of connections between the climate crisis and other significant social impact challenges that have equally tangible, direct consequences in the present day.

The World Health Organisation, for example, has reported its concern over the fundamental threat that climate change poses to health, acknowledging the complex system within which the crisis "affects the physical environment as well as all aspects of both natural and human systems".[43] The climate crisis has serious ramifications on neglected tropical diseases in particular, with a paper endorsed by Virgin Unite emphasising the need for a multi-sectoral approach to tackle this issue.[44] Furthermore, the UN's Department for Politics and Peacebuilding Affairs identifies climate change as "a risk multiplier, exacerbating underlying vulnerabilities and compounding existing grievances" for conflicts.[45]

A systems-based approach is able to map the connections between the causes of climate change and health complications, increased mortality rates, and resource shortages that lead to famine and war. **In doing so, it can increase the amount of attention and investment allocated to tackling the challenges of the future.**

A challenge that may be wrongly perceived as relevant primarily to future generations can thereby become a priority for the present.

This approach can be applied to various different social impact challenges, which can then be prioritised in the present accordingly. The holistic scope of systems thinking makes this framework an effective tool to prevent the short-termist governance that currently permeates our decision-making processes, and to help us solve challenges of the future before their worst effects are felt.

Coordination between actors is required to tackle the complex systems of the future

Applying systems thinking to the climate emergency helps to explain why mass displacement is likely to be one of the preeminent future challenges for society.

The climate emergency is rapidly increasing the frequency of natural disasters, increasing pressure on food and water supplies, and disrupting socio-economic stability in vulnerable countries. These outcomes result in the forced migration of populations reliant upon increasingly unstable environments and dwindling resources. This in turn increases pressure on factors associated with conflict, which again contributes to patterns of forced migration. These same factors, including increasing competition of extraction of resources, contributes successively to the negative spiral of climate change, increasing the frequency of natural disasters.

This systemic loop accelerates the causes and consequences of the climate and migration challenge. It also helps to underpin why a systems-based approach is required to address the challenge of a potential one billion people who could be displaced by 2050.[46]

However, its association with the climate emergency is not the only reason that a

[43] World Health Organization. (2023) Climate change and health. Available at: https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health
[44] The END Fund. (2024) Partner Perspectives: The Importance of Climate Action for NTD Elimination and Health Systems. Available at: https://end.org/wp-content/uploads/2024/05/The-END-Policy-Perspectives-Paper_FINAL_052724-1.pdf
[45] United Nations Department of Political and Peacebuilding Affairs. (2023) Addressing the impact of climate change on peace and security. Available at: https://dppa.un.org/en/addressing-impact-of-climate-change-peace-and-security
[46] Institute for Economics and Peace. (2020) Ecological threat register: Press release. Available at: https://www.economicsandpeace.org/wp-content/uploads/2020/09/Ecological-Threat-Register-Press-Release-27.08-FINAL.pdf

systems-based approach is needed to solve the challenges of forced migration and mass displacement. This is just one interaction within a complex system.

Mass displacement also has a destabilising impact on political and social systems. This perpetuates further conflict, thereby increases risk factors for further future displacement.[47] Acting now to address the causes of displacement can function as a preventative measure to mitigate against future conflicts and challenges that do not yet exist.

Multiple actors are affected by, and create impact within, an interconnected system. This is not a new phenomenon, but the weighting of power to influence elements and actors within a system has become more decentralised, underlying the difficulty of coordinating a response.

If individuals, organisations, and institutions act in isolation, they do not navigate the system as efficiently as they could, and sometimes even counteract one another or duplicate work.

A successful approach to future challenges and consequences related to mass displacement, such as refugee inclusion and integration, requires coordinated efforts on the part of governments, international organisations, NGOs, local communities, and displaced people themselves. A holistic understanding of how the actors interact with each other and other elements of the system is the first step to achieving this.

This approach can tackle direct consequences ranging from shelter to healthcare, education to human rights, by engaging influential actors within the different interacting elements of the system. However, a coordinated approach also requires alignment and direction to create long-term impact for the future. For example, the Tent Partnership for Refugees is mobilising and partnering with over 400 companies to integrate refugees. Furthermore, Refugees Seeking Equal Access at the Table (R-SEAT), founded by One Young World Ambassador Rez Gardi, is an example

of a systems-based approach that has incorporated this nuance into its work (see page 27).

Despite being 'fundamentally state-centric', R-SEAT also engages with civil society, academics, and refugees themselves to develop a coordinated approach to changing the international refugee regime. The organisation is establishing participatory mechanisms through which refugee councils can advise and direct other actors in the system.

This approach mobilises actors throughout the system. However, the alignment of their decision-making means that impact can be system-wide, and therefore more effective in addressing the challenge of forced displacement sustainably.

It is also important to acknowledge that the people who have the best understanding of the system and the necessary changes to it are individuals who are themselves displaced. Therefore, coordinating a systems-based approach in alignment with their expertise makes for the most effective response to the challenge of forced displacement and migration.

This demonstrates that in a future that is increasingly complex and decentralised, a systems-based approach is essential.

Unlocking the full potential of systems-based approaches with technology

Between mass displacement and the climate emergency, systems-based approaches are evidently effective for addressing existing issues, particularly those that will intensify exponentially in the future.

However, what is equally important for the future of systems-based approaches is adaptability to new challenges that may arise. Integrating technological advances into systems thinking and systems-

47 Newman, A. and Wang, V. (2023) 'As migrant crisis deepens, Mayor Eric Adams walks a political tightrope', *The New York Times,* 26 December. Available at: https://www.nytimes.com/2023/12/26/nyregion/migrant-crisis-mayor-eric-adams.html

based approaches can ensure that these frameworks are equipped to not only cope with increasingly complex issues, but also anticipate future challenges that emerge.

Artificial intelligence (AI) has the potential to radically enhance the efficacy of social impact solutions by providing advanced tools for data analysis, predictive modelling, and decision-making support.

The ability to easily understand and predict the consequences of a specific intervention on the whole system will increase the sophistication of solutions. This can mitigate negative indirect and unanticipated consequences when designing a systems-based approach.

Therefore, technological advances can improve the efficacy of systems-based approaches, and increase their effectiveness in the future. Expecting an individual to perfectly comprehend the vast, interconnected elements of a particular system without technological support may be unrealistic. Predictive modelling, for example, can be an invaluable tool for creating compelling systems-based approaches for the future. For example, AI modelling may be able to account for a greater number of variables in efforts to tackle falling global biodiversity than would be otherwise possible. This could include the impact of relative changes in factors like microplastic contamination that, until recently, were understudied compared to direct resource exploitation, climate change, or land use.

However, systems thinking is not just understanding the complexity of a system and acting according to its existing rules and interactions, but also improving them. A system may require alterations so as to prevent a "negative outcome...to focus our attention on redesigning some of the dynamics in the system".[48]

This is another area where AI has the potential to be transformative for systems thinking. It is the focus of the Happiness Foundation's work, to utilise the disruptive nature of AI as an opportunity for systems-based change.

Tackling challenges of technology will require their own interventions

Whilst technology creates opportunities, and offers new solutions to old challenges, it can also present new risks. For example, AI has the potential to create significant socio-economic challenges by dramatically disrupting the labour market. Some predict the eradication of millions of jobs, leading to mass unemployment and creating significant pressure on other interacting elements of the system such as welfare and healthcare.[49]

However, a less pessimistic forecast argues that competition for certain jobs will slow wage growth in certain fields, and increase the demand for skills training and education in technology itself.

The disruption caused by AI can also be understood in terms of its ability to perpetuate biases and exacerbate inequality. This challenge is addressed directly by the systems-based approach taken by the Happiness Foundation (see page 28). Founded by Dr. Keyun Ruan, this charity has designed a framework to ensure that future technological changes work systematically for human wellbeing, assisting in the creation of prosperous and stable societies.

Whatever the consequences of widespread implementation of AI, understanding how it will impact different elements and actors in various systems will be essential to the creation of effective social impact solutions to systemic challenges.

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[48] Reimagined Futures, 2023. Systems mapping as a tool for social change. Medium. Available at: https://medium.com/reimagined-futures/systems-mapping-as-a-tool-for-social-change-11cfc5e7098b
[49] BBC, 2023. Facial recognition system reveals patient's pain levels. [online] Available at: https://www.bbc.co.uk/news/technology-65102150#

CASE STUDY:

KILOMETRO UNO

Orlando Anaya
🇲🇽 Mexico

Kilometro Uno was founded by Orlando Anaya as a marine conservation initiative tackling and preventing marine pollution through cleanups, education, climate science, awareness raising activities, and public policy advocacy. This comprehensive approach to the problem of marine pollution has put Kilometro Uno at the forefront of the fight against marine litter.

The organisation has educated hundreds of thousands of young people in Mexico, Central America, and the United States. It developed the first comprehensive educational programme on ocean pollution for young people in Mexico. It has also directly removed almost a hundred tonnes of marine litter since its inception in 2012.

Kilometro Uno's advocacy work played a major role in the prohibition of plastic bags in Tijuana. This measure, which came into effect in 2020 after a 24 month adaptation period for businesses, can demonstrably reduce the amount of plastic waste found in lakes and oceans and encourage sustainability, based on similar bans in other jurisdictions.[48]

Kilometro Uno was also instrumental in the installation of a floating trash boom that is capable of capturing cross-border waste before it reaches the Pacific Ocean. This diverse approach to tackling the problem of marine pollution has helped the organisation scale its impact while pursuing multiple pathways and engaging all relevant stakeholders to succeed in its mission of reducing plastic waste in our oceans.

Under Orlando's direction, Kilometro Uno has forged partnerships with civil society actors, governments, and international institutions. It is a founding member of the Alianza Mexico Sin Plastico, a country-wide network of environmental organisations and private citizens working to mitigate plastic pollution.

The alliance does this through advocating for legislative changes, providing education, and capacity-building exercises, with the UN Environment Programme Mexico active as observers and advisors.

Kilometro Uno's systemic approach to the issue of ocean pollution means that the organisation works extensively with other initiatives and institutions at every level. This is to ensure that the effects of marine pollution on human health, biodiversity, toxicity in the food chain, and the global economy are mitigated to promote long-term human flourishing and a stable environment.

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[48] Environment America. (2024) New report: *Analysis finds bag bans effective at reducing plastic waste, litter.* Available at: https://environmentamerica.org/pennsylvania/center/media-center/new-report-analysis-finds-bag-bans-effective-at-reducing-plastic-waste-litter/

CASE STUDY:
R-SEAT

Rez Gardi
🇳🇿 New Zealand

Rez Gardi founded Refugees Seeking Equal Access at the Table (R-SEAT) after attending her first One Young World Summit in 2021. The initiative emerged out of refugee frustrations at the existing system of global refugee governance and its inability to adequately support refugee populations during times of conflict and crisis. Rez led the first Global Refugee Youth Consultations and was instrumental in the formation of the Global Youth Advisory Council to the United Nations High Commissioner for Refugees (UNHCR). She also co-founded the Centre for Asia Pacific Refugee Studies at the University of Auckland, informing responses to displacement. Her work is especially relevant as the number of displaced people globally is likely to double to 200 million by 2030.[49]

R-SEAT prioritises state actors to influence the international refugee regime, which is fundamentally state-centric. The organisation conducted research on 30 countries, detailing their histories on refugee issues and their policy approaches domestically and internationally. This research formed the foundation of R-SEAT's direction towards particular countries and has guided the organisation's focus.

R-SEAT is a key player in the development of participatory mechanisms for refugee representation in several countries, including the United States, Australia, Canada, New Zealand, Colombia, Brazil, Mexico, Switzerland, Germany, Portugal, Malaysia, Uganda, and Kenya. The organisation works with academic bodies, policymakers, civil society actors and refugee-led organisations to develop these mechanisms, implementing a rigorous selection process to ensure that members have expertise and are capable of representing the interests of refugee communities. The mechanisms have advisory input into government policy, which is then advocated by the state at international institutions responsible for the global refugee regime.

The first refugees on state delegations of the United States, Canada, Australia, and New Zealand came from the established mechanisms of these countries, and other countries such as Germany, Portugal, Brazil, and Switzerland include refugees on their state delegations while working closely with R-SEAT towards creating their own mechanisms. Refugees have spoken on behalf of their host and resettlement countries on refugee policy in international forums and chaired forums in the UNHCR as a direct result of R-SEAT's work.

The mechanisms advise and consult governments, influencing systemic change at a national level and, through this, changing the international refugee system to better align with refugee needs.

The work of the mechanisms has led to policy changes, including changes to resettlement strategies, as well as advising on funding for refugee organisations internationally.

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[49] The Guardian, 2023. Climate crisis: migrants, displaced people and extreme weather. [online] Available at: https://www.theguardian.com/environment/2023/jan/10/climate-crisis-migrants-displaced-people-extreme-weather

CASE STUDY:
THE HAPPINESS FOUNDATION

Dr Keyun Ruan
🇨🇳 China

Dr. Keyun Ruan is one of the world's foremost computer scientists. She is a pioneer in the fields of cloud forensics and risk economics. She has contributed to the development of international standards for cloud computing. Keyun is the Founder and Chair of the Happiness Foundation, an international nonprofit and think tank fostering collaboration across the fields of technology, design, and economics to recentre human wellbeing and happiness at the heart of the Fourth Industrial Revolution. The Happiness Foundation sees the disruptive nature of AI and recent rapid technological advances as an opportunity for the systemic overhaul of current socio-economic structures in favour of structures better aligned with human flourishing.

The Happiness Foundation is part of the World Economic Forum's Metaverse Working Group, to centre human flourishing in the design of metaverse ecosystems.

The organisation has also partnered with the Royal College of Art to develop design principles that can successfully embed human happiness and wellbeing into the distinct technological and economic structures that we must build in what the Happiness Foundation calls 'The Singularity Era'. These principles can be integrated into innovation processes to ensure that economic prosperity is appropriately aligned with human wellbeing in emerging products and services.

The Happiness Foundation is collaborating with the Future of Humanity Institute at the University of Oxford to devise an interdisciplinary definition of 'happiness'. This definition incorporates literature from a diverse range of academic and specialist fields including psychology, economics, biochemistry, computer science, anthropology, and existing indexes of human wellbeing and flourishing such as the OECD's Better Life Index and the Social Progress Index.

Through this work, the Happiness Foundation is developing the groundwork for a paradigmatic shift towards global structures of economy and innovation that centre human happiness.

Its frameworks are foundational to ensuring that future technological changes work systemically for human wellbeing, recognising that human wellbeing in turn provides the building blocks upon which successful and stable societies are constructed.

The Happiness Foundation, with its partner organisations, is the driving force behind haia.ai (Human AI Alignment), an alliance to develop and ensure human-AI alignment. haia comprises organisations and experts with a recognised ability to influence both the development of AI and its usage globally.

CASE STUDY:
HAKA

Farwiza Farhan
Indonesia

Indonesia's Leuser Ecosystem is a vast 2.6 million hectare forest that has increasingly come under threat from illegal poaching, logging, and palm oil plantations. Farwiza co-founded the Forest, Nature and Environment Aceh Foundation, also known as HAkA, to advocate for the conservation, protection and restoration of this important landscape. HAkA works as a collective, democratic grassroots organisation for the long-term protection and restoration of the Leuser ecosystem while centring the rights of local communities. Farwiza is also a Founding Leader of The NewNow, bringing her expertise for environmental conservation to the group and contributing to broader discussions on sustainability. As such, her involvement in The NewNow has helped her scale her global presence and leadership in sustainability and biodiversity issues.

HAkA has succeeded in winning several legal battles against exploitative companies, challenging palm oil concessions, illegal activities, and threats to biodiversity. These actions have helped protect the Leuser ecosystem by setting vital legal precedents for the environment in Indonesia. HAkA combines these efforts with wider policy advocacy efforts, influencing all levels of Indonesian environmental governance. It has been instrumental in influencing regional and national policies on land use and spatial planning in Aceh province.

In addition to its legal and advocacy work, HAkA has supported the creation of anti-poaching patrol teams, advocated for and supported the implementation of two provincial wildlife protection laws, and prevented the destruction of over thousands hectares of forest in partnership with other organisations. The organisation also has an intersectional focus, supporting the establishment of the first-ever group of female rangers in the area. In doing so, it has played an integral role in safeguarding and defending the Leuser Ecosystem's unique biodiversity. It has empowered local communities to support sustainable agriculture, eco-tourism, and sustainable development in the region, while training people to protect natural resources and advocate for their rights.

HAkA also monitors forest cover in the Leuser Ecosystem and the wider Aceh province by using satellite imagery and drones. Its educational outreach through schools and communities is helping to develop the next generation of conservation activists. This multifaceted approach, combining extensive community outreach with in-depth policy knowledge and advocacy, has allowed HAkA to generate social change for the protection of the Leuser Ecosystem on a systemic scale.

Chapter 3: Measuring Systems-Based Approaches

Introduction

Social impact assessment began as a standalone process for predicting the outcomes of a development intervention, but has since become an essential function of analysing the efficacy of a social impact intiative's activities. Becker (2001) summarised this as a process for "the future consequences of current or proposed actions, which are related to individuals, organisations and social macro-systems".[50]

Methodologies for conducting social impact assessment vary in the absence of standardised procedures to measure social impact. Data analysis can be qualitative or quantitative, and is often a mixture of these two methods. However, what connects all social impact assessment is its comprehensive analysis of social, cultural, economic, and environmental factors, ranging from specific individuals to humanity as a whole.

The IAIA (International Association for Impact Assessment) establishes the common principles of social impact assessment as the "processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions".[51]

Social impact assessment is not uniquely suitable for interventions grounded in systems thinking. Any social impact solution can benefit from avoiding simplistic and inaccurate impact measurement strategies that fall into the "mission measurement paradox".[52]

A common pitfall for social entrepreneurs is to associate growth with success rather than progress towards their social mission. Impacting 100 people in the first year, and 200 in the second, does not in and of itself indicate success. Social impact assessment considers the full spectrum of costs and benefits, and therefore can be used to track progress towards the intended outcome of a social impact intervention.

However, it is the comprehensiveness of social impact assessment that makes it well-suited to assessing social impact interventions, which are often underpinned by systems thinking.

Measuring impact across the whole the system to fully understand the outcome

Due to this suitability, conducting social impact assessment on systems-based approaches has several benefits. Systems-based approaches consider the inherent complexity of the system in which they operate and integrate this into their proposed solution. However, this complexity also poses the most significant challenge in any social impact measurement methodology.

Inherent uncertainties and complexities in social systems mean that thorough social impact assessment must rely on predictive models and assumptions that cannot fully account for every variable that influences future social conditions.

[50] Liao, H., and Welsch, H., 2003. Roles of social capital in venture creation: Key dimensions and research implications. *Journal of Business Venturing,* 18(6), pp. 745-764. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0883902602000329
[51] International Association for Impact Assessment (IAIA), 2023. *IAIA SIA International Principles.* [pdf] Available at: https://www.iaia.org/pdf/Sections/SIA/IAIA%20SIA%20International%20Principles.pdf
[52] Gupta, J., Termeer, C., Klostermann, J., Meijerink, S., van den Brink, M., Jong, P., and Nooteboom, S., 2010. The Adaptive Capacity Wheel: A method to assess the inherent characteristics of institutions to enable the adaptive capacity of society. *Environmental Science & Policy,* 13(6), pp. 459-471. Available at: https://www.tandfonline.com/doi/abs/10.1080/19420676.2011.606331

Changes in political, economic, and environmental contexts can significantly alter social outcomes, making long-term predictions unreliable.

Additionally, social impact is often layered and multifaceted, with indirect effects that are difficult to foresee or quantify. The dynamic nature of social systems, where small changes can lead to significant unforeseen consequences, only adds to the challenge of accurately predicting long-term impact.[53]

While this does present a challenge, social impact assessment nonetheless offers the most pragmatic solution. Its conclusion consists of a quantification, or at least an approximation, of all (or as many as possible) different outcomes from a given intervention.

For example, the primary benefit of a clean energy solution such as Reeddi is the reduced emissions from polluting alternatives. However, its wider consequences include improved educational outcomes, entrepreneurship, and socio-economic development. Although difficult to quantify, to ignore these significant outcomes would be to present a very limited measurement of Reeddi's work (see page 35).

A social impact assessment will be inaccurate and insufficient without acknowledging and attempting to measure the full scope of a complex system.

Balancing positive and negative consequences

Social impact is often misinterpreted and misrepresented as being unanimously positive. When representing social impact, actors are understandably incentivised to focus on positive outcomes.

However, to accurately assess the impact of an approach and to best understand the most effective means of achieving an intended outcome, the focus cannot be exclusively on the benefits.

There is an inevitable tradeoff to any action due to system complexity. In a complex system, no intervention can be a zero-sum gain. One of the distinguishing factors of an effective systems-based approach is the mitigation or avoidance of negative consequences in other parts of the same system.

If the negative consequences in another part of a system outweigh the achievements of the intended outcome, then another approach is required. This is a crucial requirement to improve the effectiveness of a social impact solution, as unintended consequences may inadvertently impede a project.

Such a negative consequence may not be linked directly to a mission and its outcomes. However, due to complex web interactions and feedback loops within a system, an intervention to create a specific outcome can end by countering its own intentions. Systems-based approaches are designed to prevent this, and when integrated with social impact assessment methodologies can act as a highly beneficial tool to prevent this common pitfall.

Foreseeing future long-term impact

Despite these evident strengths, one of the biggest challenges for social impact assessment in accurately measuring the success of an initiative lies in the long-term, unpredictable nature of systems. This is where the perceived strength of systems-based approaches makes them challenging interventions to measure.

Successful social impact assessment needs to reflect the complexity of the systems it is tasked with measuring. The ability to integrate predictive models and assumptions, and include outputs (both positive and negative) that result from interconnecting elements, make social impact assessment a vital measurement tool for implementing a systems-based approach.

Other, more simplistic, approaches to

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[53] Klijn, E.H., and Koppenjan, J.F.M., 2012. Governance network theory: Past, present and future. *Policy & Politics,* 40(4), pp. 587-606. Available at: https://www.tandfonline.com/doi/full/10.1080/14615517.2012.660356

measuring impact may suit solutions that are concerned primarily with the short-term and a limited scope. However, systems-based approaches are focused on long-term outcomes. For example, Rise coordinates advocacy campaigns for survivors of sexual assault, while also building long-term protection mechanisms for vulnerable individuals in the future (see page 36).

Similarly, Safe Hands for Girls, founded by One Young World Ambassador and Founding Leader of The NewNow, Jaha Dukureh, combines policy advocacy with grassroots work for long-term systemic change (see page 38).

To ignore the long-term effects would be to significantly understate and misrepresent the impact of a well-conceived and executed systems-based approach such as Rise, despite the uncertainty of future impact.

Varied measurement tools can account for a variety in the outcomes

It is highly unlikely that one data analysis tool will be able to account for systems-wide consequences in isolation. Measuring social phenomena requires interdisciplinary approaches and sophisticated analytical methods, which are not always feasible or available, leading to gaps in understanding and measurement.[56]

Therefore, reliance on the creativity and flexibility of social impact assessment, and its ability to accommodate different methodologies and approaches in different combinations, together offer the best means to measure a systems-based approach.

Qualitative data, such as interviews and surveys, can be subjective and may not capture all relevant factors. Quantitative data oversimplifies social phenomena by prioritising measurable outcomes over more significant but less tangible alternatives. Longitudinal data, which is crucial for assessing long-term impact, is often scarce

or incomplete.

A carefully balanced combination of different methodologies is key to conducting successful social impact assessment, unique to the initiative it sets out to measure. However, this raises its own challenges in interpreting and comparing different conclusions of the same outcome. This may not lead to a simple, all-encompassing final assessment of an initiative's outcome, but does offer the best approach to capturing the scale and scope of a systems-based approach.

Using measurement to influence design of the approach

Finally, the focus on social impact assessment in the monitoring and evaluation phase of a project implies that its contribution comes primarily towards the end of an initiative. However, it can also play a beneficial role in designing the most effective solution possible from the outset.

During the design phase, social impact assessment can help to identify and understand potential impacts on a target community, ensuring the intervention addresses actual needs and priorities. This proactive approach can guide resource allocation and strategy development, enhancing the effectiveness of an intervention.[57]

It can also help to assess the positive and negative consequences for other stakeholders in the system, which is a key consideration for any systems-based approach. Measuring social factors is central to the systems-based approach of Walk Free, founded by Grace Forrest (see page 37).

However, design is not exclusive to the project outset, and continuous impact measurement can also assist with fine tuning a systems-based approach during implementation, as intended outcomes become more realisable.

[56] Taylor, P., 2003. Public policy-making in developing countries: A case study of the Tanzanian experience. *Public Management Review,* 5(3), pp. 329-346. Available at: https://www.tandfonline.com/doi/abs/10.3152/147154603781766491
[57] Mollick, E., 2014. The dynamics of crowdfunding: An exploratory study. *California Management Review,* 56(3), pp. 118-135. Available at: https://journals.sagepub.com/doi/10.1525/cmr.2014.56.3.118

This ongoing evaluation ensures that the intervention remains on track to achieve its goals and allows stakeholders to assess progress and make evidence-based decisions.[58]

As such, social impact assessment is a hugely beneficial tool in developing and implementing a systems-based approach. It is "a field of research and practice, a discourse, paradigm, or subdiscipline in its own right".[59]

[58] Bachmann, R., and Zaheer, A., 2013. Handbook of trust research. *Handbook of Trust Research*, pp. 3-5. Available at: https://www.jstor.org/stable/43699262
[59] Klijn, E.H., and Koppenjan, J.F.M., 2012. Governance network theory: Past, present and future. *Policy & Politics,* 40(4), pp. 587-606. Available at: https://www.tandfonline.com/doi/pdf/10.1080/14615517.2012.660356

CASE STUDY:
REEDDI

Olugbenga Olubanjo
🇳🇬 Nigeria

Reeddi was founded by Olugbenga Olubanjo to fill the gaps in Nigeria's electricity supply. World Bank estimates indicate that Nigeria's electricity access rate stood at 59.5% in 2021[60] with the country experiencing an energy crisis in 2024[61] and businesses reporting outages and electricity tariffs as a major obstacle to their operations. Reeddi's product is an affordable, award-winning, cleantech alternative to the unreliability of grid electricity in Nigeria.

The company's flagship capsules are solar-powered and available to be rented for a small fee. The capsules are designed to be portable across multiple environments in a single use due to their lightweight design, and can be connected to a diverse group of personal and professional environments.

Reeddi is facilitating greater access to electricity through its capsule, in turn facilitating an extensive range of human activities for users.

This includes greater connectivity, internet usage, educational attainment, entrepreneurship, and development. In doing so, it is encouraging comprehensive, systemic change for communities in Nigeria while its daily rental model means that people with lower incomes can still partake in the benefits of greater access to electricity.

Reeddi's energy systems are also reducing energy expenses for its user base by as much as 30%. Reeddi capsules are able to displace over 160 kilogrammes of carbon emissions, and six kilogrammes of toxic pollutants from existing fuel-based systems in target communities. The company's solution is plugging gaps in Nigeria's energy system, supporting the country's

infrastructure while putting sustainability at the forefront of its operations. The capsules were labelled one of the best inventions of 2021 by TIME magazine, and Olugbenga has received funding and mentorship through One Young World's Lead2030 programme to scale his work further. Reeddi currently has thousands of clients monthly, from individuals to small businesses.

Olugbenga also established a rental platform, TempOwn, through which pieces of critical infrastructure can be leased. This platform has advertised heavy farm equipment, other machinery, and even Reeddi's own capsules. It is insurance-covered, and designed to facilitate the free exchange of vital resources that can in turn lead to systemic developmental changes for local communities in Nigeria.

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[60] World Bank, Year. Nigeria. [online] Available at: https://data.worldbank.org/country/nigeria
[61] DW, 2023. Nigerian businesses outraged by electricity tariff increase. [online] Available at: https://www.dw.com/en/nigerian-businesses-outraged-by-electricity-tariff-increase/a-68772356

CASE STUDY:
RISE

Amanda Nguyen
🇺🇸 United States of America

Amanda Nguyen founded Rise to advocate for, and protect the civil rights of, survivors of sexual assault and rape. One in three women globally are subjected to sexual violence according to research from the World Health Organisation. In 2016, Rise successfully passed the Survivor Bill of Rights unanimously through the US Congress. It has since worked to bring the Sexual Assault Survivor's Bill of Rights to state legislatures across the United States, becoming the most successful legislative reform movement in the history of the country. Rise has successfully passed 83 laws and created civil rights protections for more than 106 million people.

Rise also operates its Rise Justice Labs programme. This civil rights accelerator equips participants from around the world with the tools to pass laws and resolutions at all levels of governance. Participants have so far worked across a wide range of issues, including gun violence, climate change, and criminal justice reform. It has graduated 22 teams, who have successfully passed 19 laws in their respective jurisdictions.

Participants receive seed funding, coaching and mentorship, and also have access to Rise's network of policymakers, attorneys, and media connections. The Rise Justice Labs programme is creating systemic change across different jurisdictions by offering comprehensive guidance and resources based on Rise's own experiences with creating systemic change in the US.

Rise has also worked extensively at the supranational level. **In 2022, it led the movement to pass a United Nations resolutions recognising survivors of sexual violence.**

The resolution passed unanimously, and encourages all countries to support survivors of sexual assault through appropriate measures and by ensuring access to justice and assistance. This landmark resolution is the first time that the United Nations General Assembly has acknowledged survivors of sexual assault during peacetime. Rise's international advocacy is foundational to the creation of global systemic support mechanisms for survivors of sexual violence.

Rise also engages with awareness raising activities, such as its Survivor Fashion Show, which centres survivors' stories and partners with fashion brands to celebrate survivor empowerment. It has also partnered with local businesses and communities to promote Survivor Safe Havens across the United States, coupling its advocacy efforts on subnational, national, and international levels with local grassroots outreach and support to develop a systemic approach to tackling the epidemic of sexual assault.

CASE STUDY:
WALK FREE

Grace Forrest
🇦🇺 Australia

Founded by Grace Forrest, Walk Free is an international human rights group working to accelerate the end of all forms of modern slavery. The organisation works with governments and regulators, business and investors, faith and community leaders, and people with lived experience to drive systemic change.

Walk Free is the creator of the Global Slavery Index, the world's most comprehensive dataset on modern slavery, and co-authors the Global Estimates of Modern Slavery, alongside the International Labour Organization and the International Organization for Migration.

The Global Slavery Index aims to answer three key questions for over 160 countries around the world: the size of the problem, what governments are doing to respond, and what makes people vulnerable. The most recent edition of the Global Slavery Index revealed that the compounding crises of the COVID-19 pandemic, climate change, and conflict have led to a 10-million-person increase, but current progress is too slow.

Walk Free's team represents statisticians, criminologists, lawyers, business and human rights specialists, and experts in international development and faith engagement.

Together, they use their data and expertise to mobilise powerful forces for change against the most grievous human rights abuses.

The organisation holds power to account through its research and by conducting evidence-based national and international advocacy to change the underlying laws and policies that fail to address exploitation and allow modern slavery to occur. The group engages with businesses to highlight the abuse of workers and migrant workers that occurs in global supply chains.

As secretariat for the Bali Process Government and Business Forum, Walk Free advocates for supply chain transparency and the adoption of mandatory human rights due diligence legislation around the world.

Walk Free works extensively to change behaviours and norms that contribute to modern slavery practices, including forced marriage, and recognises the important role of faith and community leaders. Ten years ago, the group founded the Global Freedom Network, an alliance of faith leaders and faith groups committed to eradicating modern slavery. They empower communities to scale the impact of frontline interventions, for example through their partnership with The Freedom Fund. Walk Free firmly believes that lived experience is expertise and invests in survivor-led organisations and survivor-led advocacy, so that survivor leaders may lead the anti-slavery movement.
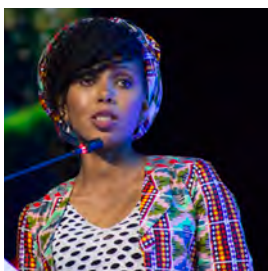
CASE STUDY:
SAFE HANDS FOR GIRLS

Jaha Dukureh
🇬🇲 The Gambia

Jaha Dukureh founded Safe Hands for Girls in 2013 to provide support and resources for women and girls affected by Female Genital Mutilation (FGM) and Early and Forced Marriage (CEFM), particularly in Africa and its diaspora. It does this by supporting survivors, raising awareness, and advocating for systemic change on this issue by combining grassroots activities with advocating for legislative change at the highest levels.

Jaha has influenced legislation in The Gambia, and advocated for legals reforms that led to a country-wide ban on FGM. The Gambia also raised the minimum marriage age to 18. She also successfully lobbied the Obama administration and the U.S. Department of Health and Human Services to commission a report on the current statistics of women in the US impacted by FGM. Her campaign received backing from the United Nations Secretary General and members of the US Congress. Jaha was appointed UN Women Goodwill Ambassador for Africa in 2018 and has used her platform to advocate for the end of FGM and CEFM across the continent.

In 2016, Jaha organised the first US Summit on FGM, bringing together policymakers, activists, and survivors to discuss ways to end the practice worldwide. The Summit was instrumental in bringing FGM to the forefront of the global human rights agenda.

Jaha is also a Founding Leader of The NewNow, collaborating with other prominent young changemakers to create systemic change globally. Through The NewNow, Jaha has connected her work on FGM and CEFM with broader efforts to promote gender equality and human rights. TheNewNow framework allows for cross-issue advocacy and a worldwide collaborative approach that can amplify the work of initiatives like Safe Hands for Girls for systemic change.

In addition to its policy work, Safe Hands for Girls is working to shift norms on FGM and CEFM through education and community outreach programmes. The organisation has trained students on anti-FGM campaigning, the effects of FGM, and the laws around the practice. It has also trained police and child welfare officers to recognise the harmful effects of FGM and increase their capacity to apply anti-FGM and anti-CEFM legislation when engaged in their official duties. Safe Hands for Girls also provides support to survivors of FGM and CEFM, and is tackling these issues at every systemic level.
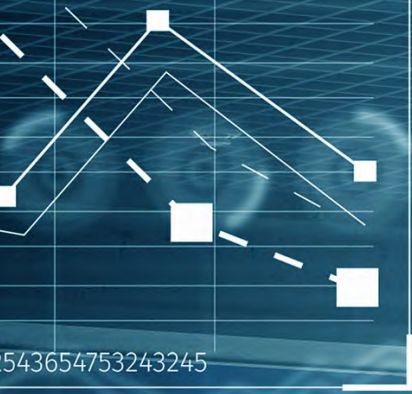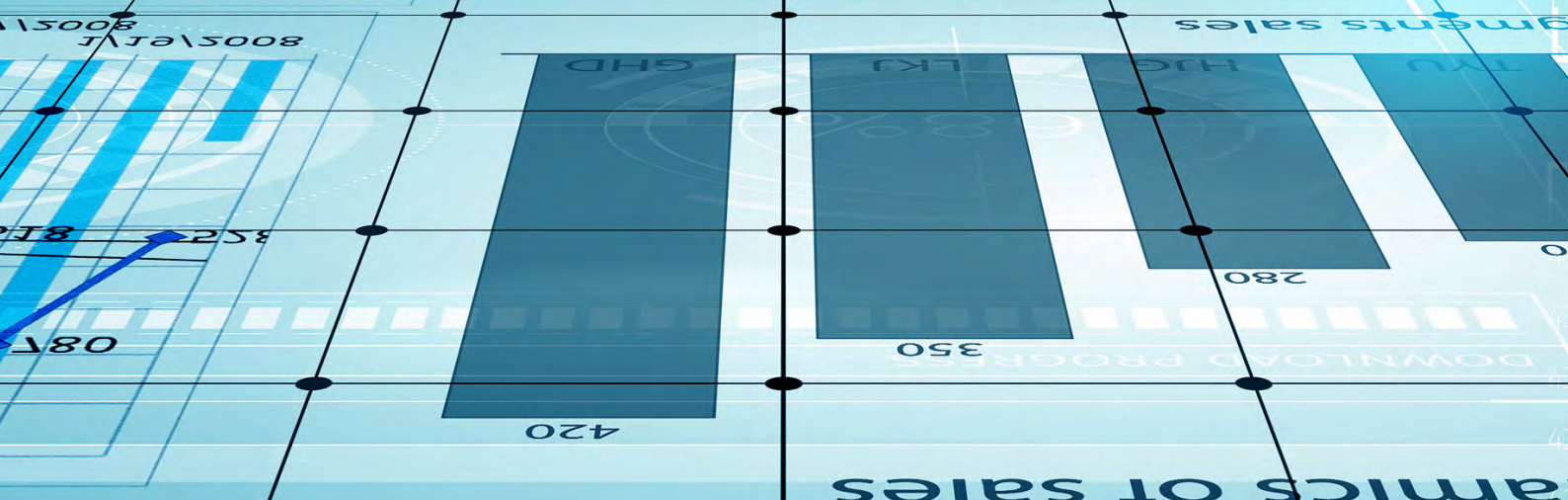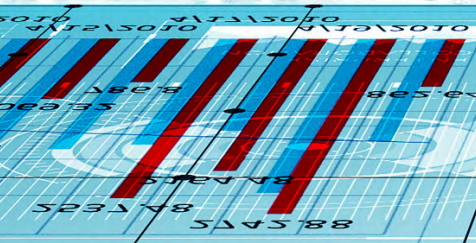
Chapter 4: Centring Indigenous Knowledge Systems within Systems Thinking

Introduction

Whilst systems thinking has largely emerged in Western-centric academia during the 20th century, Indigenous communities worldwide have long since considered the interrelated nature of the planet, ecology, human communities, and the systems that connect them together.

One Young World believes that we cannot approach the topic of systems thinking and its effectiveness at tackling global issues without also considering the antecedence of all Indigenous knowledge systems, and the importance of working in tandem with the Indigenous leaders and knowledge keepers who protect them. We give an overview here in order to educate those who may not be familiar with Indigenous Knowledge Systems, and to affirm our view that Indigenous voices must be included in every discussion on global change.

In order to centre these voices, we have also included a further reading section within the appendix. This list features the work of leading Indigenous scholars currently working on integrating Indigenous Knowledge Systems and systemic approaches to inform future engagement.

What are Indigenous Knowledge Systems?

With the global Indigenous population numbering as many as 476 million people representing over 5,000 different cultures, there is no 'catch-all' term that can do justice to the cultural distinctiveness of Indigenous communities and their ways of knowing. However, Indigenous Peoples across the globe have acknowledged that there are many shared common values "derived in part from an understanding that their lives are part of an inseparable cycle with Mother Earth" and the environment.[62]

Indigenous Knowledge Systems (IKS) — also referred to as traditional knowledge, local knowledge, Traditional Ecological Knowledge (TEK), and Indigenous science depending on the context — is often then considered the "collective term to represent the many place-based knowledges accumulated across generations within myriad specific cultural contexts" that find their foundation in these values of relationship and connectivity with each other and the wider Earth.[63]

Links with Systems Thinking

It is this intuitive understanding of relationships within systems that has drawn connections between Indigenous Knowledge Systems and Complexity Theory in systems thinking. However, systems thinking is a Western-centric academic lens through which we attempt to understand the way a system functions and the relationships between its component parts.

Indigenous Knowledge Systems, in contrast, are intrinsic ways of knowing, crafted over thousands of years and passed down and protected by Indigenous Peoples from generation to generation.[64]

As Dr Melanie Goodchild, an Anishinaabe (Ojibway) systems thinking and complexity

[62] Ali, J., Jayathma Wickramanayake, Quivioq Nivi Lovstrom, Kibett Carson Kiburo, Conde, Q., Amnai Handaine, Aisah Czarriane, Joshi, A., Ole-Henrik Lifjell, Antonia Benito Tomas, Varvara Korkina, Elvir Sahirman, Moreno, M., Steele, S., Elias, S., Martin, J. and Maximo, C. (2019). *Global Indigenous Youth.*
[63] Jessen, T.D., Ban, N.C., Claxton, N.X. and Darimont, C.T. (2021). Contributions of Indigenous Knowledge to ecological and evolutionary understanding. Frontiers in Ecology and the Environment, [online] 20(2). Available at: https://doi.org/10.1002/fee.2435.
[64] Goodchild, M. (2022). Relational Systems Thinking. Journal of Awareness-Based Systems Change, 2(1), pp.53–76. Available at: https://doi.org/10.47061/jabsc.v2i1.2027; Fletcher, G., Waters, J., Yunkaporta, T., Marshall, C., Davis, J. and Manning Bancroft, J. (2023). Indigenous systems knowledge applied to protocols for governance and inquiry. Systems Research and Behavioral Science. Available at: https://doi.org/10.1002/sres.2932.

scholar states; "Within systems thinking and complexity science, the West revitalised for itself what we have practised intuitively for generations: relationality."[65]

As a result, Indigenous Knowledge systems and systems thinking provide distinct but complementary ways of knowing. In many studies, Indigenous Knowledge has led solutions whilst utilising the 'tools' provided by systems-based methods. Below we focus on two such strands of study to highlight where these approaches have been implemented effectively, and the requirements for them to be done so at a much larger systemic scale: environmental protection and holistic healthcare.

Environmental Protection and Resource Management

Indigenous communities make up 6.2% of the global population, yet safeguard 80% of the biodiversity of the world.[66] As Indigenous Peoples' rights began to be enshrined into the United Nations global agenda throughout the 1970s and onwards, a growing awareness emerged, largely led by the UNDP, that the knowledge of Indigenous Peoples could provide solutions to some of the pressing issues being grappled with by world governments.[67] Matters of climate, environment, and natural resources stood at the forefront, and Indigenous Knowledge became a particular focal point in the United Nations Framework on Climate Change Convention (UNFCCC-21 March 1994) as well as subsequent decisions adopted by the UNFCCC.[68]

In the last twenty years, a growing portfolio of studies has shown the positive effects of incorporating Indigenous Knowledge

to understand and direct environmental management, conservation, and ecological protection efforts.[69] The focus of these studies can range from knowledge of animal-human-environment systems to understand and promote conservation efforts, forestry management, and sustainable agricultural practices. In all aspects, collaborations with local Indigenous communities with in-depth knowledge of their regional ecological systems brought with it more successful, and more impactful, outcomes.

As with all aspects of the climate crisis, young people have played a crucial role in spearheading these solutions and actively integrating the Indigenous Knowledge of their communities. Ahumuza Ignatius, a member of Uganda's Banyoro tribe, is a One Young World Ambassador and Co-Founder of Agri Planet Africa. His work focuses on preserving and promoting the traditional farming wisdom of the Banyoro people in order to strengthen African food security and promote renewable, sustainable, and climate-smart agricultural systems. Through Agri Planet Africa, Ignatius supports over 200 schools and more than 10,000 farmers in Bunyoro, bridging Indigenous farming knowledge with modern practices and adapting traditional knowledge to contemporary needs. This is largely done through bringing together multiple stakeholders to conduct and inform permaculture training and education, including farmers, women, youth, and academics, to ensure that their impact is system-wide.

Permaculture, as defined by Agri Planet Africa, is considered "a holistic approach to agriculture that focuses on creating sustainable systems that mimic the patterns and relationships found in nature."[70] In addition to focusing on the agricultural system itself, it also impacts broader aspects of the system by increasing commodity

[65] Ibid.

[66] Sobrevila, C. (2008). *The Role of Indigenous Peoples in Biodiversity Conservation.* [online] Available at: https://documents1.worldbank.org/curated/en/995271468177530126/pdf/443000WP0BOX321onservation01PUBLIC1.pdf.

[67] Ryser, Rudolph C. (2011) Indigenous Peoples and Traditional Knowledge, Berkshire Encyclopedia of Sustainability 5/10, Ecosystem Management and Sustainability.

[68] INDIGENOUS PEOPLES AND TRADITIONAL KNOWLEDGE IN THE CONTEXT OF THE UN FRAMEWORK CONVENTION ON CLIMATE CHANGE. (n.d.). Available at: https://www.ciel.org/wp-content/uploads/2019/08/Indigenous-Peoples-and-Traditional-Knowledge-in-the-Context-of-the-UNFCCC-2019-Update.pdf.

[69] For example, Housty, W.G., Noson, A., Scoville, G.W., Boulanger, J., Jeo, R.M., Darimont, C.T. and Filardi, C.E. (2014). Grizzly bear monitoring by the Heiltsuk people as a crucible for First Nation conservation practice. Ecology and Society, [online] 19(2). Available at: https://www.jstor.org/stable/26269572.; Camacho, L.D., Gevaña, D.T., Carandang, A.P. and Camacho, S.C. (2015). Indigenous knowledge and practices for the sustainable management of Ifugao forests in Cordillera, Philippines. International Journal of Biodiversity Science, Ecosystem Services & Management, 12(1-2), pp.5–13. Available at: https://doi.org/10.1080/21513732.2015.1124453.

[70] Support Agri Planet Africa. (2023). *Message from CEO | Agri Planet Africa.* [online] Available at: https://agriplanetafrica.org/about-us/message-from-our-ceo/

production and entrepreneurship efforts to create sustainable livelihoods.

Whilst permaculture has emerged as a buzzword in the agroecology sector, much like systems-thinking in general it is new terminology for principles that have been practised by many Indigenous peoples for generations. Experts have acknowledged the necessary intertwining of permaculture design with the social and economic justice required to consider it in light of its historical and decolonised context.[71] In short, it is a holistic solution that requires a holistic approach in order to practise in a sustainable and ethically engaged way.

Permaculture stands as one example of this. However, the sentiment must underpin all systemic approaches to global issues, particularly when we are considering issues that impact Indigenous peoples and communities disproportionately and for which they stand on the front line. Despite the overwhelmingly positive impact shown in studies, and examples of integrating Indigenous knowledge to climate and conservation protection measures, many Indigenous voices are still heard but not listened to when it comes to systemic change on a global scale.

Youth activists have already been critical of the Western understanding of climate change, considering these views to be the result of the same mindset that promoted exploitation during colonisation.[72] Instead, we require a paradigm shift towards recognising and incorporating Indigenous wisdom and perspectives. By acknowledging and centering Indigenous voices in global policy-making and environmental initiatives, we will then open up the possibility of fostering more equitable and sustainable solutions that respect both the planet and its diverse peoples.

Holistic Healthcare and Wellbeing

Indigenous Knowledge Systems, by virtue of their definition as place-based knowledge pertaining to regional ecologies, have primarily been integrated into environmental protection measures and climate change, as above.

However, studies prove that integrating Indigenous knowledge produces beneficial outcomes for all communities when applied to social issues, particularly those affecting Indigenous Peoples.[73]

Indigenous communities worldwide face critical health challenges, including alarmingly high rates of diabetes and significantly lower life expectancy. The vulnerability of indigenous peoples in regards to health is further exacerbated by wider challenges, including but not limited to socio-economic inequalities, limited access to healthcare services, loss of traditional knowledge and practices, and systemic racism.[74] Moreover, it is imperative to note that, indigenous women and girls are disproportionately impacted due to gender-based violence and access to certain rights. Addressing these issues requires recognising and integrating indigenous health systems and ensuring policies incorporate cultural perspectives to improve overall health outcomes and protect Indigenous rights.

System-based approaches, as toolkits, have been applied with great effect to preventative healthcare measures in partnership with Indigenous communities. A 2018 study looked at two successful approaches to obesity prevention within Māori communities by grounding approaches in Mātauranga Māori (the Māori worldview) and utilising Systems thinking methods.[75] Group model building (GMB) and causal loop diagrams (CLDs) were used as tools to "bridge" the two knowledge bases, articulating actionable insights rooted in Indigenous knowledge in order to create positive health outcomes.

[71] Spangler, K., McCann, R.B. and Ferguson, R.S. (2021). (Re-)Defining Permaculture: Perspectives of Permaculture Teachers and Practitioners across the United States. Sustainability, 13(10), p.5413. Available at: https://doi.org/10.3390/su13105413.
[72] Recio, E. and Hestad (2022). © 2022 International Institute for Sustainable Development Photo: NASA (CC0 1.0) STILL ONLY ONE EARTH: Lessons from 50 years of UN sustainable development policy POLICY BRIEF #36 Indigenous Peoples: Defending an Environment for All Key Messages and Recommendations. [online] Available at: https://www.iisd.org/system/files/2022-04/still-one-earth-Indigenous-Peoples.pdf
[73] Green, L. (2012). Indigenous Knowledge and Social Work: Focus on Indigeneity in Education and Practice. Australian Social Work, 65(3), 347-359.
[74] www.un.org. (n.d.). Health | United Nations For Indigenous Peoples. [online] Available at: https://www.un.org/development/desa/indigenouspeoples/mandated-areas1/health.html#:~:text=Worldwide%2C%20over%2050%20per%20cent.
[75] Heke, I., Rees, D., Swinburn, B., Waititi, R.T. and Stewart, A. (2018). Systems Thinking and indigenous systems: native contributions to obesity prevention. AlterNative: An International Journal of Indigenous Peoples, 15(1), pp.22–30. Available at: https://doi.org/10.1177/1177180118806383.

A key point raised within the study was how Western healthcare systems, which prioritise person-centred care, are in direct conflict with the holistic community-centred approaches prevalent among Māori and many other indigenous cultures globally. The Atua Matua Māori framework instead roots healthcare within an understanding of the natural world. Rather than 'prescribing' treatment to tackle an issue (e.g. the individual is at risk of diabetes, therefore that individual must exercise to prevent this), the Atua Matua view instead encourages the community to pursue and build upon environmental knowledge that will then indirectly improve health outcomes. For example, instead of the individual being told they must surf for health benefits, the aim is to instead pursue an understanding of the ocean physically, spiritually, and psychologically which ultimately will lead to the act of surfing, whilst removing the guilt and blame of a perceived personal health deficit.[76]

This study, and a number of others conducted, have shown effective systems-based applications that incorporate Indigenous knowledge and healing practices into healthcare services at the local level.[77] However, many national and international efforts and systems still fail to adequately consider the needs and perspectives of Indigenous communities. This misalignment became particularly evident during the COVID-19 pandemic.

The COVID-19 response varied in its integration of Indigenous communities worldwide, with some countries actively involving Indigenous leaders in planning culturally appropriate responses, while others faced challenges such as language barriers, marginalisation, and inadequate support.[78] In situations where this support was not incorporated, the responsibility then lay with Indigenous communities to ensure that information was adequately distributed.[79]

In contrast, One Young World Ambassador Victor Lopez-Carmen is a Dakota and Yaqui student at Harvard Medical School, who served as acting-clerk for the Subcommittee for Indigenous Peoples in the US House of Representatives. During the COVID-19 pandemic, he obtained grant funding for Indigenous translators from over 35 countries to produce accurate information in over 40 Indigenous languages. Victor has also advocated for the inclusion of Indigenous perspectives in global health practices at the UN. He is the creator of the Ohiyesa Premedical Program, and a formal clinical rotation on his Tribe's reservation.

Multiple studies have identified Indigenous language use and revitalisation as a key protective factor in the health of Indigenous populations, with cultural connectedness also showing a direct correlation with mental wellbeing.[80] Of the 7,000 languages spoken today, it is estimated that more than 4,000 are spoken by Indigenous Peoples.[81] As such, it becomes a key integration point when we look to effective systemic changes in healthcare that benefit all communities. Whilst we focus specifically here on healthcare, this integration also rings true across a number of connected areas.

One Young World Ambassador Carson Kiburo, alongside his organisation Jamii Asilia Centre (JAC), advocates for a systemic approach to Indigenous priorities by engaging with multiple stakeholders, ranging from international institutions to local outreach programmes. As part of their work, JAC has been implementing a cultural and language revitalisation programme to ensure that Endorois Indigenous knowledge is transmitted intergenerationally and that vital Endorois culture and knowledge is preserved (see page 44).

We encourage all to familiarise themselves with the work being done by Indigenous scholars on Indigenous Knowledge Systems.

[78] Ibid.
[77] Ibid. Lipscombe, C.F.P., Wishart, R., Marshall, M. and Bekessy, S. (2016) 'Integrating Indigenous Knowledge and Western Science into Environmental and Health Decision-Making in Canada', The International Indigenous Policy Journal, 7(4). Available at: https://journals.sagepub.com/doi/full/10.1177/1178630216671996
[78] IMPACTS OF COVID -19 ON INDIGENOUS WOMEN AND GENDER -DIVERSE PEOPLE Policy Brief. (n.d.). Available at: https://www.nwac.ca/assets-knowledge-centre/FNIHB_COVID-19_in_Indigenous_Communities_policy_brief.pdf.
[79] United Nations. (n.d.). *Addressing Global Challenges with Indigenous Knowledge.* [online] United Nations. Available at: https://www.un.org/en/academic-impact/we-are-indigenous-addressing-global-challenges-indigenous-knowledge.
[80] Whalen, D.H., Lewis, M.E., Gillson, S. et al. (2022) 'Health effects of Indigenous language use and revitalization: a realist review', *International Journal for Equity in Health,* 21(169). Available at: https://doi.org/10.1186/s12939-022-01782-6; Gibson, M., Stuart, J., Leske, S., Ward, R. and Vidyattama, Y. (2022) 'Does community cultural connectedness reduce the influence of area disadvantage on Aboriginal & Torres Strait Islander young peoples' suicide?', *Australian and New Zealand Journal of Public Health.* Available at: https://doi.org/10.1111/1753-6405.13164
[81] State of the World's Indigenous Peoples Vol I, United Nations.

CASE STUDY:
JAMII ASILIA CENTRE

Carson Kiburo
🇰🇪 Kenya

Carson is a community organiser leader from the Endorois Indigenous People in Kenya, working on the rights of Indigenous People. He previously served as Co-Chair of the Global Indigenous Youth Caucus, a platform through which Indigenous young leaders can participate in international decision-making processes and represent themselves on a world stage.

Carson is also the Executive Director of the Jamii Asilia Centre (JAC), an Indigenous-led organisation founded to protect and promote Indigenous rights in Kenya. JAC platforms Indigenous voices in the country, and acts as a unified body for Indigenous People to champion their rights and inclusion as enshrined in law. This unified front exists to bolster Indigenous priorities by coordinating against infringements of Indigenous rights through forceful land seizures and evictions, dispossession, and political underrepresentation. In Kenya, Indigenous communities like the Ogiek, Maasai and Endorois have experienced systemic evictions from their ancestral lands.

JAC carries out its mission through public education and training, tailored programmes for the socio-economic empowerment of Indigenous women and a forum for Indigenous youth to foster strategic partnerships for the inclusion of Indigenous young people in governance-related decision-making processes. These programmes form the basis of long-term engagement by Indigenous women and young people to influence governance structures in the country to foster systemic change for the betterment of their communities.

JAC is also implementing a cultural and language revitalisation programme to ensure that Endorois Indigenous knowledge, particularly on ecology and preserving nature, is transmitted intergenerationally. This programme is using digital tools to offer a systemic approach to the preservation of vital Endorois culture and knowledge.

JAC is advocating a systemic approach to Indigenous priorities through this engagement with international institutions, coupled with its local outreach and programmes. JAC's leadership has represented Indigenous people at the national, regional, and international levels, and the organisation engages extensively with Indigenous communities to ensure their participation in multi-stakeholder forums. JAC has been active at the United Nations Permanent Forum for Indigenous Peoples Issues, the United Nations Expert Mechanism on the Rights of Indigenous People(EMPRIP), United Nations High-Level Political Forum, the United Nations General Assembly, the UNESCO Youth Forum, and the African Union's African Academy of Languages.

Conclusion and Key Takeaways

"My own involvement with One Young World has shown me the immense potential and passion of its Ambassadors. Over the past decade, I have witnessed first-hand the transformative impact One Young World has on young leaders, turning their ideas into actions that make a real difference."

- Richard Branson, Virgin Group Founder

This paper proposes to be a useful tool for young changemakers, offering them a clear, insightful understanding of systems thinking and systems-based approaches. Using the seven key principles of systems thinking — interconnectedness, holistic view, feedback loops, nonlinearity, systems mapping and modelling, leverage points, and boundaries — it offers examples of successful systems-based approaches in public health, the criminal justice system, and regenerative agriculture. These examples present an encouraging picture of the uses of systems thinking, noting that while challenges undoubtedly remain, systems thinking has unique advantages to solving long-term, difficult problems. Furthermore, the planetary boundaries framework is used to illustrate the importance of understanding intersecting thematics for a systems-based approach.

Looking to the future, chapter 2 illustrates that a systemic approach is a vital necessity to addressing three key challenges — the climate crisis, forced migration, and disruptive technologies. The innate inclusivity of systems-based approaches, and the interconnectedness of actors and elements within systems, suggests that such frameworks can assist changemakers in determining key leverage points through which change can be advocated and implemented.

Chapter 3 outlines the benefits and challenges of measuring systems-based approaches. The sweeping nature of systems-based approaches can pose problems for social impact assessment, but it remains an integral part of systems thinking. The chapter also stresses the danger of unintentional negative consequences and the role of systemic approaches and social impact assessment in providing a resolution. It further emphasises that social impact assessment should be embedded throughout a systems-based approach to design and strengthen a proposed solution.

Finally, chapter 4 provides a brief overview of Indigenous Knowledge Systems, their distinctiveness, and their complex relationship with Western-centric systems thinking. It stresses the vital necessity of acknowledging and including Indigenous voices and Indigenous Knowledge Systems, while highlighting the central role they can play in tackling the climate crisis and public health crises. A reading list with essential resources for further research can be found in the Appendix.

One Young World's mission to inspire, elevate, and build the skills of young changemakers in every country makes it a natural home for systems thinking and systems-based approaches. We encourage all readers, and especially our global community of young leaders, to integrate systems thinking into their work, and believe that systems-based approaches have a central role to play in tackling the global challenges that we face. The case studies presented throughout this paper demonstrate the exceptional work that One Young World Ambassadors are already doing with systems-based approaches, as well as the Founding Leaders of The NewNow. These Ambassadors and Founding Leaders were selected as examples for this paper precisely because of their achievements. Yet they can also serve as inspiration to others, including future changemakers of The NewNow, looking to embed systems thinking into their own projects and initiatives, to create a fair and sustainable future for all.

Appendix

Systems Thinking and One Young World's Theory of Change

One Young World's Theory of Change outlines our commitment to, and method of, impacting young people to support them in their mission for a more sustainable and equal world. Young leaders are the people most invested in our collective future, understanding best their own needs and those of their peers and communities, while being uniquely well-placed to utilise the tools and resources of contemporary technology and paradigms.

The crises facing us are global in scope; as a result it is vital for One Young World to continue supporting young leaders from every country to ensure that local knowledge can inform global perspectives through a worldwide network of exceptional changemakers.

One Young World identifies and connects young leaders from every country through our partner organisations and scholarship programmes. We contribute to their success as young leaders by:

- Inspiring them to increase their social impact through interactions and knowledge sharing with our Counsellors, exposing them to new insights and information that can better inform their work and scale their impact.

- Building their skills and capacity through our funding mechanisms, Action Accelerator programme, and the One Young World Academy. We ensure that our Community of young leaders remain connected and supported through wide-ranging events and opportunities.

- Elevating them by providing a platform through which they can speak about their work, experiences, and ideas to a global audience at our Summits and through our reports and social media channels.

Systems thinking helps leaders reduce this risk by encouraging them to question the existing system - the boundaries, perspectives and relationships that could be relevant to addressing a complex issue.[80] Through systems thinking, leaders can generate deeper insights, guard against unintended consequences and co-ordinate action more effectively.[81]

[80] Cabrera, D. and Cabrera, L. (2015). Systems Thinking Made Simple. Odyssean Press, Ithaca NY.
[81] Hobbs, S. and Midgley, J. (2021). Systems Leadership Think Piece. Available at: https://assets.publishing.service.gov.uk/media/5f881f978fa8f5041ec572a5/NL-thinkpiece-Systems-Leadership-HOBBS-MIDGLEY.pdf (Accessed: 9 July 2024).

The Founding Leaders of The NewNow

The Founding Leaders of The NewNow are working together across a diverse range of global issues to create change through collaborative action:

Abdalaziz Alhamza, Founder and Spokesperson at Raqqa is Being Slaughtered Silently

      https://www.raqqa-sl.com/en/

Farwiza Farhan, Co-Founder of Forest, Nature and Environment Aceh Foundation (HAkA)

      https://haka.or.id/

Roya Mahboob, Co-Founder and CEO at Digital Citizen Fund

      https://digitalcitizenfund.com/

Victor Ochen, Founder of the African Youth Initiative Network (AYINET)

      https://ayinet.org/

Jaha Dukureh, Founder of Safe Hands for Girls

      http://safehandsforgirls.org/

Uzodinma Iweala, CEO at The Africa Center

      https://www.theafricacenter.org/

Taylor Wilson, Physicist and Founder of Prometheus Industries

      http://www.sciradioactive.com/

Further Reading on Indigenous Knowledge Systems and Systems Thinking

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- Note: Fikret Berkes is not from an Indigenous Community. However, we are including his work here as his research has made significant contributions to the understanding and integration of traditional ecological knowledge within sustainability practices.

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