

Systemic thinking and practice

A practical Guide to Nature 4 Health's scoping work

Prototype

2023

Acknowledgements

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Preface



If you want to go fast, go alone. But if you want to go far, go together.



Truer words have never been spoken when it comes to reducing the risk of future pandemics and spillover events.

Our misuse of biodiversity is the leading cause of diseases that jump from animals to humans, called zoonotic diseases. In today's interconnected world, these diseases can spread fast with huge costs to the whole planet, and no single entity, institution, government department, or discipline can overcome the challenge alone.

But we can change the way we interact with nature and, together, imagine a future where we prevent pandemics at their source, tackling causes rather than treating symptoms. A future where we understand that our world is composed of intertwined systems, all of which need to be taken into account to build resilient societies. A future where we work together to prevent diseases spilling over while respecting local populations and cultures.

This means acknowledging the complexity and unpredictability of preventing zoonotic disease spillover and that there is no magic bullet or single solution. This means going beyond simple cause and effect and creating the conditions for truly transformative change.

Instead of business as usual, we must work collaboratively to make sense of these complexities. Everyone needs to be part of the solution, in a participatory process, enabling stakeholders to co-create solutions, rather than simply observing from the outside

This Guide is a start in the right direction. It explains systems methodologies and how collective action can be aligned to the One Health approach. It is a practical Guide on how to use systems approaches to support local, national and international stakeholders, institutions and organisations to implement One Health on the ground and integrate action into policy.

This is not going to be easy. Systems change and One Health are complex and uncertain. They take courage. They take patience. And most of all, they take collaboration.

By acting together, we can stop pandemics before they spill over.

About this Guide

This interactive Guide enables you to navigate through as needed to facilitate efficient and targeted use of its material.

You can read sequentially from start to finish or use the tabbed sections to navigate directly to the section(s) of interest. The Main Menu is the zero page for navigation – from there, you can click on the image or words to navigate to the three Parts of the Guide. At the bottom of each page, you can click on the navigation commands to return to either the Main Menu or the beginning of that Part.

Throughout the Guide where specific techniques, concepts or practices are mentioned, you can click on underlined words to navigate directly to the section of the Guide that explains that concept in detail. Back navigation is not yet possible in this version of the Guide. References are also hyperlinked in the text. Any underlined text denotes a hyperlink.

How you can use this Guide

The Guide was specifically developed to help with the scoping stage of an N4H project. However, other people will find the Guide usefulness in their own tasks. For instance:

- **managers** motivating staff to think and act more systemically;
- **researchers**, especially **action researchers**, seeking out new tools for inquiry and analysis;
- **teachers** and **lecturers** instructing students on how to think and learn about addressing and resolving ‘wicked problems’ in society and beyond;
- people in networks like **One Health or N4H**, working between the **public sector**, **private sector** and **civil society** to conceive effective ways for communication and collaboration;
- **policy workers** exploring the consequences of adopting various strategies and tactics;
- **evaluators** assessing the value of interventions that are clearly very messy with lots of possible ways of judging worth;
- **consultants** and **coaches** looking to demonstrate that systems thinking leads to more sustainable results;
- **community workers** trying to steer projects along complicated paths in difficult environments.

How did you use this Guide?

It is important that this Guide is both used and useful. We are committed to ensuring that is the case, but we need your help to achieve this.

Context is everything. Different people will find different parts of the Guide useful in different ways.

Please complete [this short survey](#) that will help us update the Guide based on your feedback. Because the Guide is online we can do that relatively quickly and at regular intervals.

We are particularly interested in:

What you found useful and in what way

What you did not find useful and for what reason

Whether the explanations of the methods are detailed enough for you to use them

Anything you would like to see added that could be useful for others

You may also contact us directly at info@nature4health.net

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Executive Summary

How could the risk of the next pandemic be substantially reduced? How much would it cost? Would there be trade-offs as well as benefits? Who could make it happen?

By tackling the upstream drivers of zoonotic pandemics, there is a unique opportunity to go beyond managing disease outbreaks and stop potential epidemics and pandemics before they spill over from animals to humans. This means understanding the activities which bring humans, livestock and wildlife into close contact such as livestock rearing, wildlife trade and consumption, deforestation and urban expansion.

Nature for Health (N4H) was established to do just that. A unique partnership made up of the world's leading public authorities in the fields of environment and health together with pioneering country partners, N4H is working collaboratively to reduce the risk of zoonotic disease spillover, before they jump from animals to humans. N4H is working in low- and middle-income countries that face the highest risk of emerging and re-emerging infectious diseases, to tackle sources of risk in order to prevent outbreaks or transferral of zoonotic pathogens between species.

N4H adopts a systemic approach. This means acknowledging the complexity and unpredictability of evolving conditions and working collaboratively with others to make sense of these complexities. It recognizes that no single entity, institution, government department, or discipline has a comprehensive understanding of the entire system, nor can anyone solve pandemic challenges alone. Working in 15-18 countries or regions by 2030, N4H will work towards stopping potential pandemics before they spill over from animals to humans. Key to this, N4H will work in collaboration with stakeholders, inviting and encouraging diverse parties to engage in creating effective systemic change, rather than merely observing systems from the outside and having the impacts of actions by others imposed from afar.

This practical Guide is written to support N4H's Phase I work in Ecuador, Ghana, Mongolia, Rwanda, Vietnam and Zambia. This begins with a 3–6-month scoping, or systemic inquiry, to analyse the situation of concern, identify the key problems and best solutions, and to ensure that N4H can implement a sustainable and viable intervention which is demand-led, co-designed by a broad range of stakeholders, and ultimately as appropriate as possible for the context. It has been written to:

1. Establish a common systemic process across the countries in N4H Phase I
2. Provide a practical resource that builds on existing approaches and is adaptable and customisable
3. Create a dynamic living document that evolves and develops alongside our implementation experience.

The primary audience is the N4H core teams – the key individuals with responsibility to operationalise N4H’s work. However, the document may also be of interest to all N4H partners, participating organizations, and stakeholders from multilateral institutions, the environment sector, special interest groups, Indigenous people and local communities, finance institutions and donors, local governments, educational, scientific and technology communities and the private sector.

As this Guide is designed to offer practical guidance through a specific process, we address the audience throughout as “you”. This refers both to you, the individual reading the document, the members of the core team delivering the scoping work, and to “you” in the broader sense, as teams of systemic One Health thinkers and practitioners designing the N4H scoping phase – and processes beyond this.

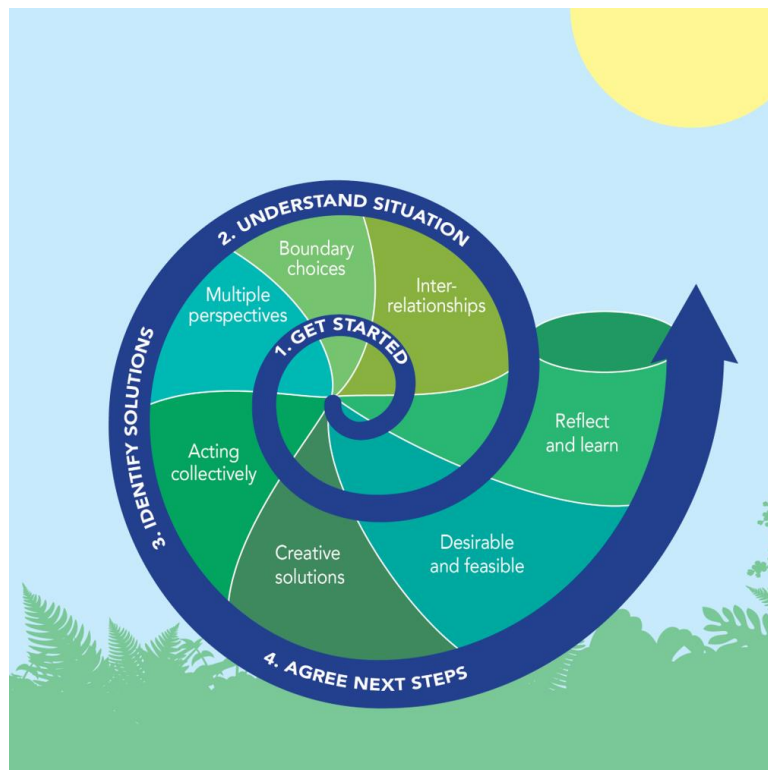
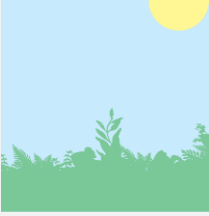


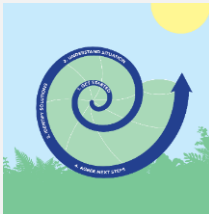
Fig. 1: Systemic practice to guide the Nature for Health scoping process

As illustrated in these diagrams, this Guide is composed of 3 parts: the context, the process and the practice.



I Context

An overview of Nature for Health, One Health and systematic practice and why they are all necessary to reduce zoonotic spillover. It provides a clear rationale for this work and an introduction to the purpose and outputs of the N4H scoping stage.



II Process

The key steps in the scoping stage include getting started, understanding the situation, identifying solutions and agreeing next steps. An iterative process that gradually through a systemic approach and led by the roles of leader, facilitator and project manager.

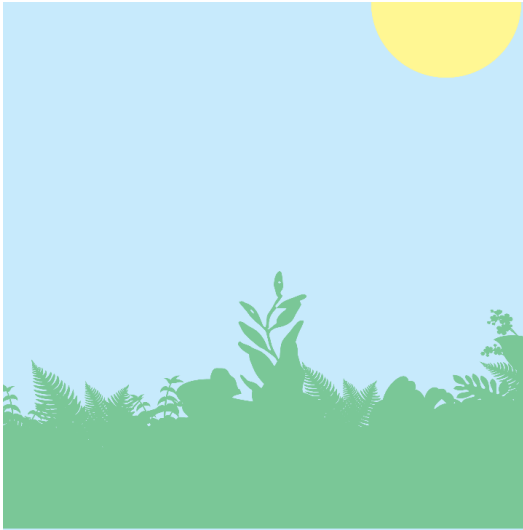


III Practice

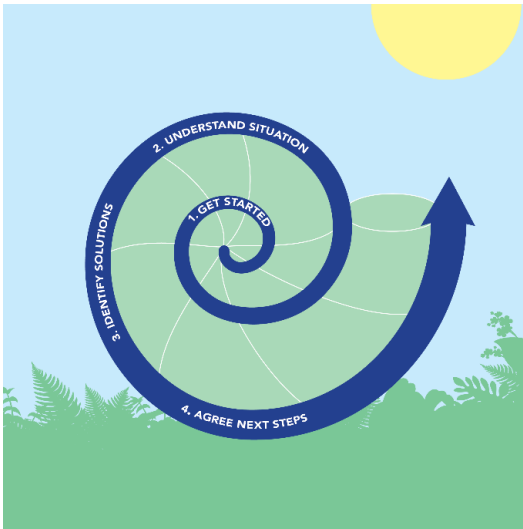
At the heart of the Guide, this section explores seven essential elements of systemic practice. Each practice is explained before selected approaches and techniques are outlined and a set of reflection questions as a checklist or summary. Potential tools for pulling it all together and a summing up section provides room for reflection and moving on.

The Guide is about thinking and practising core systemic ideas. It is not a defined process with a clear starting or finishing point rather to be adapted and customised according to individual or project needs. The Guide can be used at the beginning of the scoping stage, through each of the four process steps and applying different systemic practices along the way. It can be picked up halfway through the scoping work, to support a stakeholder consultation or to help with creative, practical solutions. Or towards the end of the process, as an opportunity to reflect and check that practices have been systemic through the process.

This first version will be tested during N4H Phase I scoping stage. It will develop and grow as experience is gathered and new iterations will be made available for future phases of work. This will include case study examples which will be developed as the first countries go through the systemic process.



Part I: Context



Part II: Process



Part III: Practice

Part I: Context

Preventative One Health

Nature for Health

Systemic Practice



Preventative One Health

Drivers of infectious disease

There is a compelling case for preventing the next pandemic. About 60% of human infections originate from animals, and the estimation jumps to 75% for new human infectious diseases. Drivers of this spillover include land use change, climate change, wildlife trade and consumption, and unsustainable agricultural practices that lead to ecosystem degradation and habitat fragmentation. Overall, the broken relationship between people and nature implies changing interactions among species, including between humans and animals (wild and domestic). Biodiversity, climate change, and the health of animals and humans are inextricably interlinked.

Human population growth, high population density, urbanization and globalization characterized by unsustainable production and consumption patterns, have highlighted more starkly than ever the linkages between the health of humans, animals and the environment. Although knowledge gaps remain on the roles of specific drivers, it is clear that ecosystem disruption and loss of biodiversity have major impacts on the emergence, transmission, and spread of many infectious diseases that affect humans. The environmental barriers protecting us from the spillover of zoonotic diseases and emergence of novel pathogens have been severely eroded. These issues are complex and evolving.

Preventative One Health

The need for prevention

The greatest burden of zoonotic disease is borne by low-income communities. However, as shown by the COVID-19 pandemic, emerging infectious diseases can also have significant and wide-ranging global economic, health, and societal impacts, with monetary costs into the trillions. It is simple maths: the costs of preventing pandemics are far lower than the costs of managing a global outbreak, and offer plenty of co-benefits, including improved local human, animal, and ecosystem health outcomes.

The cost of epidemics and pandemics – Some examples

- The 2013-2015 [Ebola outbreak](#) in West Africa took over 11,000 lives and caused 2.8 billion USD in economic losses, according to the World Bank, with some estimates as high as 53 billion USD. It also caused severe interruptions in schooling and routine treatment, with long-term negative impacts on health and wellbeing.
- [COVID-19](#) caused over 6.5 million deaths, and economic losses likely exceeding 12.5 trillion USD through 2024.
- Highly pathogenic [avian influenza](#) causes human and animal deaths, loss of livelihoods, and threatens wild bird populations.

COVID-19 acted as a stark reminder of the interconnectedness between the health of humans, animals, and our natural environment. Without significant efforts to address disease spillover, research indicates that epidemics and pandemics will occur more often, spread more rapidly, and do further damage to human health – and in turn to the global economy. There is an urgent need to reduce the frequency and likelihood of future epidemics, pandemics and related health risks, all of which can be done through strengthening the environmental aspects of One Health.

Preventative One Health

Obstacles to change

One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. It recognizes that the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and interdependent.

One Health is not a new concept. Animals and animal health have been deeply embedded within human medicine since pre-modern times and, as scientific ideas and practices changed over the centuries, new links were forged. The term was officially coined in relation to serious declines in wildlife linked to a zoonotic disease that was also causing illness in humans. Cross-cultural exchanges, practitioners, and increasing uptake by international health organizations brought human and animal health, and to a lesser extent, the environment, more into alignment – and in the early 2000s, the term One Health came into use. These integrated approaches gained traction, but mainstreaming the One Health approach into broadly implemented action has been slow, and decision-making and policies often remain in silos.

In recent years, increasing numbers of One Health initiatives and networks have emerged, and continue to emerge, both globally and nationally. However, a significant implementation gap still exists at the community level, due a chronic lack of investment, limited awareness, knowledge and understanding, fragmented institutional landscapes, lack of policy integration, and existing bias towards individual, siloed, sectoral approaches. In the rare instances where integrated solutions have been employed, they have generally not yet been tested beyond the local scale.

It is crucial that countries with high risk factors for zoonotic spillover take stock of and reduce risks, can detect new diseases early on, and are prepared to mitigate outbreaks. However, public health policies and programmes often focus on emergency response and treatment for human diseases – leaving aside long-term prevention, which necessarily requires integrating animal and environmental health considerations, as well as strengthening biodiversity conservation. To date, stakeholders in the broader environmental sector have typically lacked the capacity or resources to integrate disease prevention into the planning, management and implementation of conservation and sustainable-use actions.

Preventative One Health

In contrast to reactive approaches focused on reducing or containing the spread of a disease, primary prevention, or preventative One Health, is a proactive approach which addresses the drivers of infectious disease emergence – the ecological and anthropogenic factors and activities that increase the risks of spillover – thus reducing the chance of diseases being transmitted from animals to humans in the first place.

To reduce spillover risk, multiple stakeholders must be engaged to fully understand connections and find viable solutions that go beyond first order change and single cause problems. One Health supports transformational change that looks at issues in a different way, challenges existing assumptions and brings in multiple perspectives: this is a systems approach. It involves changing the patterns of interrelationships within the complex circumstances that give rise to zoonotic spillover. Ultimately, taking a systemic approach to pandemic prevention is about committing to continuous learning in the context of complex and uncertain environments, which involves sense-making in real time and being responsive to emerging conditions.

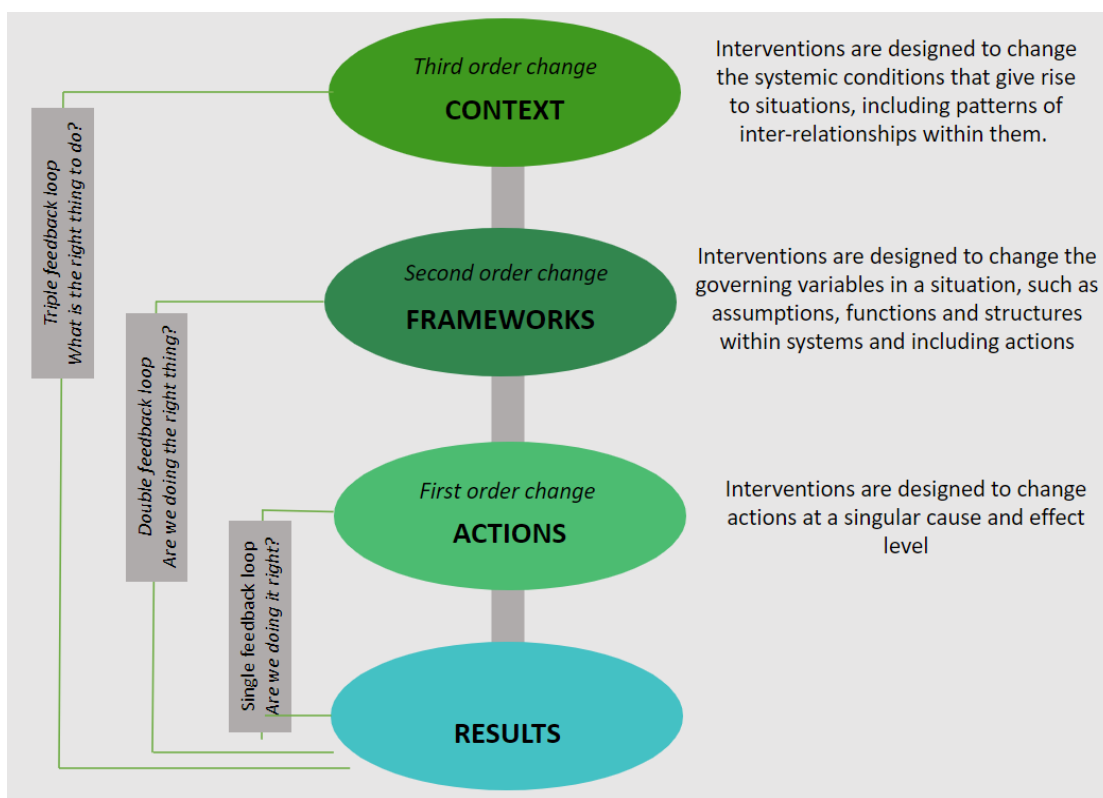


Figure 2: First, second, third order change

Nature for Health

What is Nature for Health?

N4H is a global initiative, working nationally to reduce health risks by strengthening the environmental aspects of One Health through a systems approach. Through an initial seed funding contribution from the German Federal Ministry for Environment, Nature Conservation and Nuclear Safety, N4H will assist countries and regions to develop coordinated policies, generate and disseminate evidence on the links between biodiversity, climate and health, and support decision makers and other relevant actors to take measures focused on prevention.

With eight initial Partners, N4H brings together leading UN agencies, governments, intergovernmental organizations and civil society groups in the field of environment and health, each of which leverages extensive, multisectoral and diverse One Health practical experience. These Partners include: the German Federal Ministry for Environment, Nature Conservation and Nuclear Safety, Secretariat of the Convention on Biological Diversity, United Nations Development Programme, United Nations Environment Programme, World Health Organization, World Organisation for Animal Health, EcoHealth Alliance and International Union for Conservation of Nature.

With a Secretariat based at United Nations Environment Programme headquarters in Nairobi, Kenya, the N4H governance structures include a Steering Committee and an independent Technical Advisory Group. The Fund is administered by the United Nations Multi-Partner Trust Fund Office in New York, United States of America.

As a systemic initiative, N4H will promote a widespread understanding of the importance of biodiversity and environmental conservation and position long-term preventative action firmly in human health policies and programmes. N4H will catalyse integrated policymaking, evidence-based action on the ground and capacity development across sectors (e.g., health, environment, development) at the local, national, regional and international levels to foster One Health approaches that fully integrate environmental dimensions to prevent health risks, with an initial focus on potential zoonotic epidemics and pandemics.

N4H aims to achieve more holistic policymaking by creating further evidence for the links between biodiversity, pollution, climate and health, as well as by working with actors on the ground to demonstrate how cross-sectoral approaches can be integrated into measures to address health risks and reduce pandemic risk through work on preventative One Health approaches in key jurisdictions. N4H supports decision makers and relevant actors to implement actions at the ecosystem, animal and human health interface.

Nature for Health

N4H has seven core pillars of action:

- Address the environmental dimension of One Health through upstream prevention and implementing One Health principles.
- Foster action on the ground through tailor-made strategies to assess, build, enable & sustain One Health at a local / national / regional level.
- Collaborate in an intersectoral, multidisciplinary way amongst key partners to advance One Health impacts.
- Support projects that utilise a participatory, demand-led approach based on systemic practice.
- Pool and integrate multiple donor contributions efficiently and transparently.
- Learn and share insights and integrate into global policy and knowledge networks.
- Operate on the basis of accountability, social equity, transparency, transformation and value-creation.

To be successful, these actions require cross-sectoral engagement, information sharing and integrated decision making, along with adequate resourcing.

Additional information about Nature for Health can also be found online at:

- [Nature for Health \(N4H\) \(nature4health.org\)](https://nature4health.org)
- [N4H animation](#)
- [N4H partners video](#)

Nature for Health

The Nature for Health process – Phase I

Within the current funding, N4H will work in three phases, adapting to the specific challenges and needs of each selected country. Phase I, lasting 2–3 years, will involve N4H-funded work in six countries. Future phases will expand N4H to more countries. Phase I consists of three stages: country selection, scoping, and implementation.

Country selection

N4H invited interested countries to submit their expressions of interest to join N4H by describing their context, challenges related to biodiversity and zoonotic diseases, existing approaches to One Health, and potential goals if selected to work with N4H. Central to the process, applicants needed to demonstrate both their commitment to collaboration and a systems approach. Based on these submissions, Ecuador, Ghana, Mongolia, Rwanda, Vietnam and Zambia were selected for Phase I.

Scoping

During the 3–6-month scoping stage, country teams will undertake a series of consultations and ultimately develop an Implementation Project Document, which will outline how the country's N4H intervention will reduce the risk of spillover through One Health actions.

Implementation

The implementation stage will span 2–3 years and will be based on each country's unique challenges, interests and priorities, aligning with N4H's overall outcome areas (see Annex I and N4H Theory of Change but will involve enhancing evidence on links between biodiversity, climate change, and health for better decision-making, supporting governments to develop effective policies, structures and frameworks for preventative One Health, building capacity, knowledge management, and advocacy to implement such policies and frameworks and establishing sustainable partnerships and governance.

Nature for Health

Outcomes

The impact of N4H is to achieve reduced health risks and related impacts emanating from environmental degradation, climate change, land use changes, biodiversity loss, animal husbandry and wildlife trade and consumption. The goal of N4H is the implementation of One Health approaches in select jurisdictions by 2030 which will be achieved through its Theory of Change (Annex 1) and four outcomes:

1. **Assess:** multidisciplinary research and modelling data and rationale for investment.
2. **Build:** preventative actions and policies through legal environments, disease and risk factor surveillance, detection and reporting.
3. **Enable:** capacity building, knowledge management, advocacy and awareness raising with respect to the links between nature, climate change and health.
4. **Sustain:** collaboration and governance structures that facilitate sustained and strengthened preventative planning, action, accountability and policy.

The outcomes are not tackled sequentially but run in parallel to allow for adjustment based on context and need. For example, the implementation of One Health initiatives on the ground may inform the enhancement of evidence. Similarly, a strengthened or newly established regional One Health structure will facilitate outreach activities and capacity building.

Lessons learned from the country selection processes, the scoping phase, and the implementations in-country are archived in an interactive learning network, which increases operationalisation and sustainability while sharing collective knowledge amongst partners and more broadly to include countries where N4H has yet to work.

All four outcomes are complementary and interlinked. Keeping in mind two key components of the ultimate outcome, cross-sectoral and scale (global, regional, national and subnational levels), it is important to note that each outcome will require both action by different Partners, so that cross-sector collaboration and mutual learning is ensured, and also action on different levels, involving target groups from regional or national, down to and including, community level.

Nature for Health

About scoping

The objective of the scoping stage is for each country to design a systemic inquiry into their chosen situation and generate a common understanding among stakeholders. This common understanding will be developed into a project document that will guide the implementation stage, during which N4H partners will undertake the activities specifically identified and prioritised by the stakeholders. The scoping stage is designed as a systemic inquiry which concludes with a feasible, desirable and sustainable Implementation Project Document (IPD) that is co-developed by partners and approved by the N4H Steering Committee. The scoping stage is a time-limited exercise estimated to last approximately 3 months (possibly up to 6 months) and to be completed by the end of 2023 / early 2024.

The Phase I Scoping Project Document (SPD) template outlines the work that is to be completed, including summary information, project and country background, scoping stage objectives, expected results, workplan and budget.

The Participating Organisations may subcontract other organizations, in accordance with their organization's own applicable regulations, rules, policies and procedures, including those relating to procurement, selection and assessment. However, the Participating Organisation cannot subcontract government entities, according to the rules set by the funder.

In compliance with N4H terms, at least 70% of funds must be spent on local content. Further information on the N4H funding modalities and windows is detailed in the Operations Manual (section 3).

Whilst there is typically one partner leading the work – the Convening Partner – depending on the country context and situation, additional technical support may be contributed by other N4H Partners during the scoping stage. All N4H Partners are invited to participate in the scoping work in other countries but are not expected to attend all of them. This is an important aspect of N4H's strong partnership approach, to ensure that expertise and project-specific learning are leveraged in all Phase I countries' scoping activities. Additional key stakeholders will be identified and confirmed during the scoping stage planning and included into relevant scoping activities, with their participation subject to local content funding specifications.

Systemic Practice

Systemic practice draws on the field of systems thinking to inform professional practice. While practice is about the way that practitioners think and do as they work within a particular context, systemic practice is grounded in an understanding of the ways in which systems behave. It also assumes that we are part of the systems we seek to change.

What is systems thinking?

Systems thinking can be traced back to the earliest school of Greek philosophy in the 6th century BC and Taoism from 4th century BC. It continued to be developed within Indian, Persian and Arabic thinking during the first millennium AD and has often been the bedrock of thinking for indigenous worldviews and practice.

Development of the modern systems field dates back about 100 years, when a dissatisfaction arose with the effectiveness of working in siloed professional fields, and practitioners began to incorporate ideas from many different disciplines, such as biology, physics, mathematics, physiology, economics, philosophy, psychology, sociology, and engineering. More recently, it influenced the development of many other fields including management, epidemiology, computing, group dynamics, action research, ecology and family therapy.

The field now contains many different theories and literally hundreds of different methodologies that range from the highly mechanistic to the deeply spiritual. Despite this diversity, the one thing they all have in common is that they help to explore highly complex and uncertain situations to address 'messy' situations with the following characteristics:

- They are novel or unique as they arise in a specific context that it is difficult to understand from the outside looking in
- Once they begin to unfold, there is no pause button or obvious stop point
- They cannot be fully understood until possible solutions are formulated
- They are complex with no obvious single cause or single effect The solutions are not right or wrong, but they may have better or worse impacts that cannot be known at the time, depending on the specific context, values and priorities, including trade-offs and benefits

Systemic Practice

Scoping your project using systemic practice

Scoping a project in your situation is a complex task in an ever-changing environment. The world does not stand still, and your situation is not likely to fit neatly into a discrete government department or policy area. In fact, it is more likely that drawing a boundary around who or what should or should not be included in your project already poses a challenge. Different contributors will have different ideas of what should be done, who should benefit, who should control, whose knowledge should be privileged and how resources should be used. Some will have more power than others, while some will have different kinds of power than others.

How your situation is defined, and by whom, will determine the quality and likely success of the project in shifting governing variables and paradigms currently in use. It is also important to plan with the idea that while your intervention cannot address all aspects of your situation simultaneously, it will have consequences that are both positive and negative beyond the horizon of the project.

Systemic practice will support you to deal with these multiple concerns.

Distinguishing between conventional management practice and systemic practice

Systemic practice is based on a different paradigm than conventional Western management practice. Conventional management practice is based on the underlying philosophy of the world as a machine that we can manage from an objective standpoint by dealing with each variable independently. It seeks specific solutions to clearly identified problems and seeks accountability within hierarchical structures.

Systemic practice, on the other hand, sees the world as a series of complex interconnections and patterns, of which we humans are a part. Objectivity is an illusion. The complexity means that problems and solutions are not always clear. We therefore share responsibility for learning iteratively about how to engage with situations that emerge in a world in continuous flux, rather than be accountable for identifiable results of specific actions. This expanded awareness can ultimately help to achieve better strategies and outcomes for society.

	Conventional management practice	Systemic practice
Underlying philosophy	World as a machine with predictable parts that can be managed and controlled	World as a series of interconnections and patterns where parts are inseparable from the whole
Scientific paradigm	Assumes an objective neutral stance is possible	Assumes that personal histories and experiences always impact perspective
Objective of intervention	Seeks to fix problems and find answers	Seeks improvements through locating leverage points for intervention and accommodations between different perspectives All interventions are temporary Directed towards learning; responsive to emerging conditions
Approach to intervention	Breaks down issue into discrete parts and works in silos through vertical accountability.	Understands issues are part of an integrated system, where properties of the systems arise from inter-relationships between different elements of the system Responses are designed as an iterative process, as learning continues throughout the intervention
Deciding on focus and scope	Creates definite boundaries	Boundaries are temporary constructs that need to be decided on consciously and changed in light of new information through iterative processes
Focus on inter-relationships	The focus isolates variables from context	The focus contextualises information, looking for feedback loops and interrelationships between issues
Ethics	Hierarchical accountability to someone	Shared sense of responsibility for something
Relationship to power	Often considered once at stakeholder analysis phase	Actively considers power dynamics in design and continuously throughout practice

While systemic practice contrasts with conventional management practice, they often complement each other. For example, conventional management skills are needed to organize the logistics of stakeholders coming together, but coming up with a workable plan applicable to a complex environment that does justice to the rights of indigenous people and also capitalises on epidemiological expertise, calls for more systemic practice.

What is essential for systemic practice?

Systemic practice is not just about ‘thinking’ but also about ‘doing’. It is therefore about the art and science of turning concepts and ideas into action through engaging in practice that addresses real-world issues.

Practice refers to habitual ways of engaging with situations. The context serves as repositories of knowledge, allowing us to adapt as we work to respond to changing external conditions. Systemic practice operates at three levels: it helps us to deal with immediate situations, or first order change while also offering the opportunity to shape socially-defined practice as in second and third order change.

‘Systemic practice’ is a collective name for a set of essential practices. The illustration highlights seven of these essential elements that collectively facilitate systemic practice. They are interrelated and build on each other. The relationships between them mean that each part is more powerful when applied alongside the other parts. This means you will need to engage with all of them at some point, although not necessarily all at the same time.



1. Understand inter-relationships. It is often easier to observe inter-relationships and remain on the outside than to be inside and understand what they mean (and to whom), if and how to intervene and what the consequences might be.
2. Engage with multiple perspectives. People hold diverse perspectives, and those perspectives will influence their behaviour in your project. Therefore, you not only need to include and understand those multiple perspectives; you also need to actively engage with them to create a desirable and feasible project.
3. Make critical boundary choices. No practice can include everything. Doing one thing means not doing something else; achieving something implies not achieving something else. As soon as you choose a purpose or identify a problem or a solution, you have identified and taken important boundary decisions about what to keep in or out of your practice.
4. Act collectively. Engaging with multiple perspectives implies collective action and decision-making. There are many different forms of collective action, and it is important to choose which ones are appropriate to your project and its context.
5. Focus on creative solutions. To clarify what the core issues are and what to do about them, you need to simplify the complex without being overly simplistic. Stepping back from reality for a while and exploring the ideal or hypothetical is an important step towards creative yet practical solutions.
6. Ensure action is desirable and feasible. Ultimately, reality intrudes on the most creative ideas. Systemic practice is focused on how to identify and manage contradictions between what would be desirable to do and what is feasible. That includes exploring your and others' values, power and capabilities to achieve sustainable projects.
7. Learn and reflect. Complex situations are dynamic and unpredictable. Actions often have unanticipated consequences. Thus, continuous learning and reflection underpin an iterative and evolving journey throughout the scoping process and beyond.

Taken together, these elements of systemic practice will support you to develop a systemic inquiry for your scoping stage. A systemic inquiry refers to the way in which you bring these essential practices together with others to explore your complex and uncertain situation to generate change that is feasible, desirable and sustainable. How you use systemic practice to design your inquiry will be discussed in the next section.

Scoping Process in Brief

Here are some questions to ask about your project that flow from the seven essential systems practices.

1. Understand inter-relationships	<ul style="list-style-type: none"> • What assumptions are you making about the dynamics of the inter-relationships? • What evidence supports and/or challenges your assumptions?
2. Engage with multiple perspectives	<ul style="list-style-type: none"> • If you place yourself in the shoes of other people who do not share the same position, role, or worldview as you, how would they describe the situation or problems associated with that situation? Would they even think it a problem? • What does this imply for your assessment of the current situation or problems associated with it?
3. Make critical boundary choices	<ul style="list-style-type: none"> • In what way do these multiple understandings of the situation imply different purposes for your project and different stakeholders of your project? • What do these multiple understandings imply for who should and should not be included in developing your project?
4. Act collectively	<ul style="list-style-type: none"> • Thinking about who has and has not been involved in your project to date, what power have they had to influence the scoping? • What power should they have to influence the scoping?
5. Focus on creative solutions	<ul style="list-style-type: none"> • If you have already decided what the problems are, what potential solutions have you already excluded? • If you have already decided what the solutions are, what problems will not be resolved by those solutions?
6. Ensure action is desirable and feasible	<ul style="list-style-type: none"> • What do you think are the major challenges for achieving a desirable <i>and</i> feasible solution? • What tensions or contradictions underpin these challenges?
7. Learn and reflect	<ul style="list-style-type: none"> • What are you discovering in your scoping that was new to you? What still puzzles you? • What does that mean for the future of your project?

Part II: Process

Scoping Process in brief

Establishing the Core Team



Scoping Process in Brief



The process you use will determine the results you get



Systemic practice entails thinking about and practising core systemic ideas, wherever you are in a process or project. There is no fixed start point or end point to a systemic inquiry, but rather multiple entry points. If you have already started, it can be worth using the reflection questions to help apply a systemic lens. You can start your systemic inquiry from wherever you find yourself.

A systemic inquiry covers all the process that you engage in to develop your scoping plan that results in a workable ('feasible') implementation plan, which is acceptable to those involved ('desirable'), and is sustainable. However you approach your inquiry, you will need to ensure that you have conducted a robust process that reflects seven essential systemic practices as well as the four process steps outlined here.

The process for the scoping stage includes four iterative steps shown in the spiral illustration:

1. Getting started: All partners and stakeholders have different starting points. This first step involves bringing the core group to a shared beginning and working together to understand the different starting points.
2. Understanding the situation: refining your situation of concern: working with stakeholders to understand the situation and explore their concerns and issues. Putting some initial boundaries around your system and identifying the different relationships at play that shape causes or outcomes.
3. Identifying potential solutions: this is the expansive part of your project planning, exploring possible ideas and discussing their desirability.
4. Agreeing next steps: this is the narrowing part of the project planning, selecting specific ideas and possibilities and testing for their feasibility and sustainability, and where the planning for the implementation work begins.

Scoping Process in Brief

Step 1. Getting started

The first step is getting started and laying solid foundations for the project. All project planning processes have a starting point, although not all project planning starts in the same place. It is therefore important to use this Guide as a frame of reference – not as a linear process to be gone through from A to B to C. The process in the Guide is aligned to the N4H Phase I timeline, however it reflects and draws on the wealth of knowledge and experience that has gone before.

Getting started will involve bringing the core team together for the first time to understand the “situation of concern”. Ideally, the team won't start with fixed ideas of either the problems or potential solutions. To prevent these common project planning mistakes, aim to understand the current situation unhindered by definitions of problems or solutions, what to do next and with whom. For instance, a solution might be to set up a coordinating body to share information about animal welfare. But that is potentially a solution looking for a problem. It is based on a range of assumptions about how information flows around a system and is used. It assumes the 'problem' is something to do with communications or relationships. You may experience it as that, but others may not. Reframing a situation as a “situation of concern” rather than a problem may give more room to design a project. In this case, the situation of concern could be characterised as relating to the informed practice of zoonotic disease prevention. Starting there may uncover more profound problem situations and more powerful solutions.

The scoping stage initial planning will be undertaken by one or more representatives from two entities, referred to here as the Core Team, and consisting of: 1) the Country Partner, specifically designated ministerial representatives appointed by the government, and 2) the N4H Convening Partner, with responsibility for representing N4H and undertaking the project administration and coordination. The number of representatives will depend on the context - the Convening Partner might bring representatives from both headquarters and the local office to the first meeting or even a whole team if they have already been working on a related topic. Similarly, the Country Partner might bring a representative from the leading government ministry plus individuals from the other ministries that provided endorsements for their Expression of Interest.

It probably won't involve much stakeholder consultation at this stage, but it will require starting to identify who the stakeholders are, and initial consultations with a small, core group. “Getting started” will also require some initial planning and ensuring that decision-makers are on board. Obviously, these are important tasks at the very beginning of project development, but they may also be necessary at any stage in the process to regain some clarity if you get stuck.

Scoping Process in Brief

Topic	Potential task	Key links to essential elements of systemic practice
Core team	Plan any protocol measures Establish a “Core Team” with representatives from the N4H convening partner and Country Partner Reflect on where you are, including N4H project goals	<p>Engage with multiple perspectives: whilst the initial focus is on the core team, it is important to think about which perspectives need to be involved in scoping work and why. It is also important to consider when to bring them into the process whether for initial sensitisation or deeper engagement.</p> <p>Take collective action: getting the right people involved in your project is a key decision: they need to have the right skills and authority. They also need to be involved in the right way, and relevant structures and processes need to be in place to support collective action.</p> <p>Learning and Reflection: the importance of learning and reflecting on that learning at each stage of the process cannot be overstated. In the beginning, it is important to have a sense of how everyone's arrival point into the project affects how they view it and engage.</p>
Problem / situation of concern	Review original Expression of Interest submitted to the N4H process Consider the situation of concern e.g., spillover events, changing human-animal interfaces, geographical scope Reflect on work to date, initial insights, past experiences Do a Snappy System	
Stakeholder mapping	Map initial stakeholder groups and understanding the potential motivations and commitments Identify inter-relationships and potential opportunities / challenges	
Planning	Discuss initial insights, constraints and expectations Planning the engagement process, touchpoints / workshops needed and theme / topic of each.	
Secure buy in	Get buy-in from top management Sensitize core stakeholders about the process	

Step 2. Understanding the situation

Now the process has started, and you have some initial ideas, thinking and reflections down on paper. It is time to test them with a larger group of stakeholders. Using systemic approaches allows for assumptions to be surfaced and considered, and multiple viewpoints and motivations to be discussed.

Success comes from ensuring the right groups are included at the right times (consider the potential N4H stakeholders in Annex 2 to avoid overlooking less visible or obvious groups). Keep in mind the N4H outcome areas and any other project funding considerations as you reflect on your boundaries.



Learning involves developing a level of comfort with being uncomfortable and not knowing.



Typically, one N4H Partner is leading this work but as an N4H partnership, it’s also important to leverage the available expertise of the other N4H partners. This is also the point at which to consider the different roles that will be needed for the scoping work and longer term. These are identified in the following section and include a leadership, project management and facilitation role. Facilitation by an experienced systems practitioner is a key aspect for successful problem identification and framing. And don’t rush ahead to thinking about solutions—not yet.

Topic	Potential tasks	Key links to essential elements of systemic practice
Convene stakeholders	<ul style="list-style-type: none"> Bring key stakeholders together (check list in Annex 2) Create a setting for participants to feel welcome and comfortable sharing their input Identify the key roles including a facilitator to manage the process Clarify objectives Consider the depth and structure of the relationships 	<p>Make critical boundary choices: right from the beginning, you have to make some initial decisions about what to include and exclude. Critical Systems Heuristics can help clarify the core decisions that every project has to make.</p> <p>Engage with multiple perspectives: bringing in multiple perspectives at the start of your design process has a range of benefits e.g., understanding motivations and commitments of key stakeholders helps decide who does and does not need to be involved in the project proposal development.</p>
Redefine problem / the situation of concern	<ul style="list-style-type: none"> What key perspectives are privileged and what are marginalized? With what effect on whom? Decide and reflect on boundaries, including N4H Theory of Change (Annex 1) 	<p>Understand inter-relationships: diagrams are often useful ways of assessing where you are. Rich Picturing can help expand the possible ways of understanding the situation and locating potential problems and ways of addressing them. What assumptions are you making about the way in which the parts of your project or the general situation you are dealing with inter-relate and affect each other?</p>
Stress test	<ul style="list-style-type: none"> Reflect on existing policies and practice Understand how they help address situations of concern or perpetuate undesirable behaviours Identify synergies, co-benefits, conflicts / trade-offs 	<p>Consider also asking the “5 Why’s” to ensure the root causes are clearly identified (some of which may be in or out of scope for an eventual project).</p> <p>Learning and reflection: staying open and curious is a core systemic practice and will serve you in both formulating your situation of concern and engaging with multiple stakeholders.</p>

Scoping Process in Brief

Step 3. Identifying potential solutions

This is the expansive part of project planning, where possible ideas are explored and their desirability discussed. It is important to avoid rushing to identify specific solutions or narrowing the focus too early.

At the end of Step 2, the problem should be well understood and defined, following the discussions and systemic exercises with stakeholders. These same stakeholders will be the key actors in starting to think about potential solutions, and new stakeholder groups may also be identified as the situation becomes more fully understood.

These discussions can be held during the same event as addressing Step 2 (Understanding the Situation). However, if logistics allow, it may be beneficial to reconvene the group a while later, as it gives people some time to process the learning and a different way of doing things.

Over-commitment from potential partners to what the problems are at the beginning of the process is unhelpful, as it leads to fixating too soon on solutions. This is because creative and transformative solutions emerge through a process of expansive deliberation.

Topic	Potential tasks	Key links to essential elements of systemic practice
Convene stakeholders	<ul style="list-style-type: none"> Check whether the participants remain the same or whether additional perspectives need to be brought on board Ensure all participants have a shared understanding of progress 	<p>Take Collective Action: The framework for collective action can be used to generate ideas about what kind of collective action is desired, or as a checklist to ensure that the collective action of creating ideas for desirable futures is well-balanced.</p> <p>Focus on creative solutions: This Guide presents a range of methods and techniques that promote developing creative solutions.</p> <ul style="list-style-type: none"> There are many forms of ideation workshops that can be used in combination with appreciative forms of inquiry that build on what works. Backcasting and Scenario Development are other ways of achieving this.
Brainstorm solutions	<ul style="list-style-type: none"> Identify how you are going to brainstorm solutions and which tool would best support the process Ensure the tool / process are well understood by participants 	<ul style="list-style-type: none"> The expansion of CATWOE to incorporate more aspects of Soft Systems Methodology can help with simplifying the complex tangle of possibilities. The expansion of Critical Systems Heuristics expands the range and richness of boundary issues that need considering. <p>Make the desirable feasible, viable and sustainable: the Guide provides a range of approaches that can assist you to assess the feasibility of the project including the following:</p> <ul style="list-style-type: none"> Three Horizons helps with unsticking conversations that are working a cross different logics and timescales. Exploring different aspects of power when used in an appreciative way rather than problem orientation can help identify desirable actions. It is worthwhile to explore the kinds of assumptions you are making about the desirability of your project.
Explore desirability	<ul style="list-style-type: none"> Analyse possible consequences (intended or not) Identify potential conflicts 	
Consider implications	<ul style="list-style-type: none"> What needs to change? How is that the same for different groups? Who has the necessary competencies? How to leverage N4H or other partners? 	<p><u>Learning and reflection:</u> The section on different orders of learning will help you distinguish between doing things right and doing the right thing.</p>

Scoping Process in Brief

Step 4. Agreeing next steps

Agreeing next steps is the responsibility of the core team and key representatives of the stakeholder groups that will drive the process forward. This is the reductive part of project planning, where specific ideas and possibilities are narrowed and tested for their feasibility. It can be difficult to gain clarity and find agreement. Trade-offs need to be made, and it is important not to lose sight of the ideal while exploring who is on board, who is not, and what might need to change to be successful. Don't forget to consider the accountability structures and how power issues are reflected at this stage.

The scoping stage work will establish the responsibilities and roles for the future team (including additional partners, whether they are other N4H partner organisations or local organisations in-country), clarify goals, costs and deliverables and explain the boundaries of the project.

The expected results of the scoping exercise in each country includes two specific outputs:

Implementation project document

The key result is an N4H Implementation Project Document (IPD), which details the plan on how to move forward for the bulk of the N4H implementation project, expected to last 2-3 years. The IPD template key elements include:

1. Aligned with key outputs in the N4H Theory of Change
2. Structured using the following elements:
 - Project description (objectives, planned activities)
 - Stakeholder analysis (building on scoping stage report)
 - Logical framework
 - Work plan
 - Budget
 - Safeguards
 - Learning and results
3. Approved by the N4H Steering Committee

Scoping Process in Brief

Scoping stage process report

An additional requirement is a short report (approximately 5 pages, 2500 words) that outlines the country’s One Health context and the process followed during the scoping stage, with details of the stakeholder engagement, identified activities and lessons learned. The Scoping Report template includes three qualitative questions in addition to specific indicators:

- How did you ensure a systemic approach?
- What challenges did you encounter?
- What lessons did you learn?

It is important in this step to blend use of the essentials of systemic practice with conventional aspects of the project management approach (logframes, workplan, budgeting), which can make this final process complex.

Topic	Tasks	Key links to essential elements of systemic practice
Select feasible options	<ul style="list-style-type: none"> • Cost the activities • Estimate timeframes • Agree costs and estimates with core team and additional stakeholders • Consider (co)financing options 	<p>Understand Inter-relationships: Influence Diagrams are a useful tool for assessing the feasibility and sustainability of your project proposal, especially if you keep the map relatively simple and focused on core issues to be considered.</p>
Write up Implementing Project Document	<ul style="list-style-type: none"> • Review and complete IPD template, including logframe, budgets, workplan and safeguards • Gather and integrate missing information 	<p>Make Boundary Choices: Feasibility and sustainability are all about making those difficult in/out choices and then reflecting on their likely implications. It is also important to identify powerful stakeholders who might feel themselves or their ideas marginalized or excluded by your boundary choices.</p> <ul style="list-style-type: none"> • The expanded version of Critical Systems Heuristics is particularly useful in identifying what the implications of those boundary choices may be and how to mitigate any challenges to feasibility and sustainability. • The section on power will provide insights into how to manage and address their power.
Gather feedback	<ul style="list-style-type: none"> • Test with stakeholders including review through the N4H TAG • Agree roles and responsibilities • Sensitize decision makers 	<p>Make the desirable feasible, viable and sustainable:</p> <ul style="list-style-type: none"> • How do you manage power issues? Sustainability is most likely when designed into the project from the beginning rather than in an ad hoc way further down the track.
Ensure sign off	<ul style="list-style-type: none"> • Prepare N4H scoping stage process report • Finalize IPD • Submit to Steering Committee for approval 	<ul style="list-style-type: none"> • The assumptions about the feasibility of are also likely to be critical to achieving sustainability and are worth revisiting. <p>Learning and reflection: We are often blinded by our own enthusiasm and commitment to ideas, especially at the stage where specific commitments to action are being made. It is useful to consider your own position in the project and the implications of that position on the actual feasibility and sustainability of the project.</p>

Establishing the Core Team

Designing the scoping stage is an intricate task. Such change requires strong leadership, project management and collective learning to bolster the potential for a well-scoped project. It is critical to identify functions within the core team that can develop a solid scoping plan. Each of these functions will contribute differently and will need to tackle different aspects of systemic practice to different degrees.

These roles include 1) leadership which is about resourcing and promoting the work, convening and dealing with political and power dynamics, 2) project management and systemic facilitation to ensure the scoping work remains on track and within budget while liaising with the core team and stakeholders and reporting on success and 3) systemic facilitation to support the process and view situations through a systemic lens and ensuring systemic practice.



Figure 3: Roles and tasks within the core team

Establishing the Core Team

In essence, these functions are interdependent, but are also varied enough to require a team where each function can be optimally performed. While it may seem efficient to merge functions, consider that a leader requires extensive local knowledge while a facilitator needs a strong systemic capability. The project manager needs a strong focus on more systematic tasks around governance and logistics, which means they need to blend conventional management expertise with systemic practice to handle governance and logistics effectively. This frees up the leader to champion the project externally and the facilitator to focus on process. Similarly, a facilitator's ability to manage dynamics in the room allows the leader to fully engage in discussions based on their subject matter expertise. The leader can focus on forging relationships at a strategic level without having to negotiate accommodations between diverse groups.

Each function also requires a different level of experience in terms of systemic practice. At a basic level, a systemic sensibility – an understanding of our interconnectedness and wholeness, with which we are all born – is needed across all functions and roles. The leadership role also calls for some theoretical commitment to systemic practice, but the facilitator requires a high level of capability around systemic practice as well as theory.

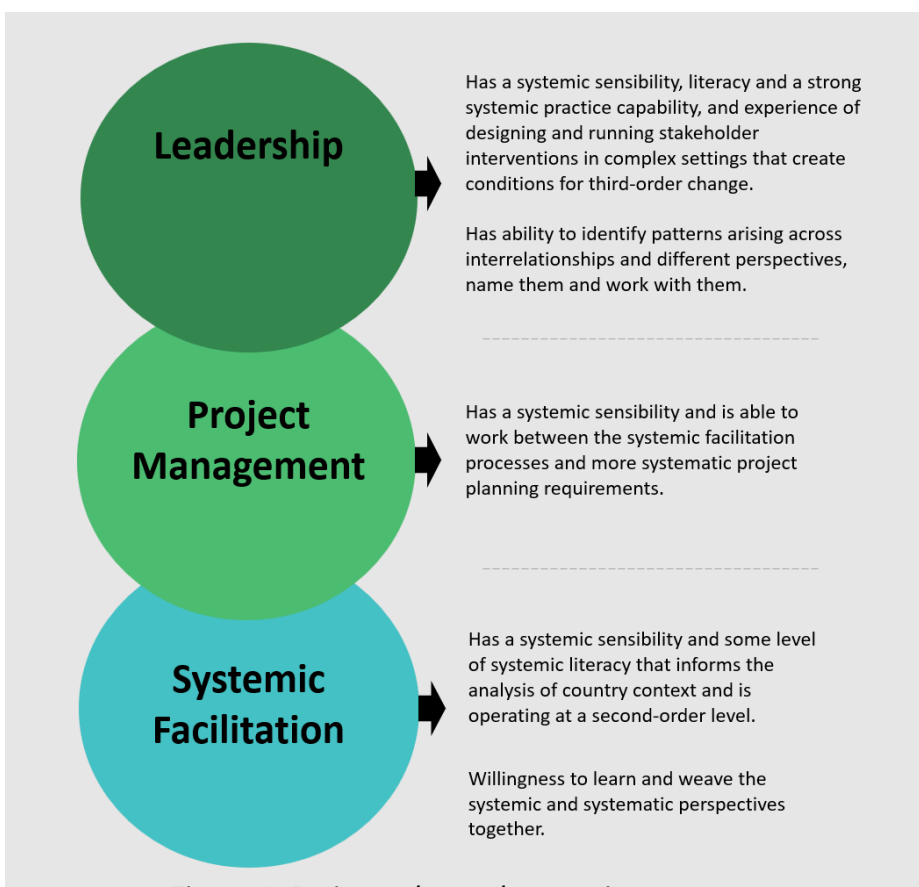


Figure 4: Project roles and systemic awareness

Establishing the Core Team

Systemic facilitation is key to engaging in a scoping process that is likely to meet the ambition of changing the contexts in which One Health and N4H operate. A systemic facilitator should be continually involved in the scoping process, as they play a pivotal role in ensuring the design phase embraces the essential elements of systemic practice and guaranteeing that personal and collective learning remain on the agenda throughout. There are many definitions of a facilitator, but broadly speaking, a systemic facilitator helps individuals and organizations to support and strengthen their systemic practice. This will include designing the process iteratively, establishing strong working relationships, and helping participants to engage and contribute. There is no template for systems facilitation, since culture and context vary considerably. However, at this stage of project development, the role is likely to require listening, motivating, coaching, asking critical questions and keeping the group on track in the discussions.

Developing a suitably ambitious project demands both individual and collective learning at a third-order level. This is deep work. There is skill in holding a psychologically safe space, where participants feel comfortable to express opinions openly whilst also being able to ask critical questions.

A skilled systemic facilitator can identify patterns within the system that can help or hinder the process, as well as gaps between stakeholders' professed values and what they do in practice. They are also skilled at identifying issues around entrainment: where stakeholders begin to display the very behaviours that they identify as problematic in others (e.g., only considering the short term, interrupting colleagues to provide their insights or multiple issues related to power). This requires a high level of skill and an ability to work with people from diverse backgrounds and often with different values and opinions. It also requires skill to manage different levels of power and conflict and still arrive at feasible and actionable accommodations amongst people working to different purposes.

“

Creating change is an inside-out job and requires the right conditions.

”

Establishing the Core Team

Who is the systemic facilitator?

The systems facilitator may be internal and come from the core team as part of the N4H partner organisation or country partner. This gives an informed insight into the process but can be a challenge, as these roles need to represent their organisation's interests as well as those of the broader group. Alternatively, the systems facilitator may be an independent specialist hired for the specific role, where they may have less knowledge of the core organisations, but their focus can be on listening, interpreting and channelling the different perspectives without explicit concern about who they represent. Ideally, the systemic facilitator would have a background working in health, environment or even in One Health to easily follow discussions and make relevant interventions. But most critical is knowledge of systems dynamics and processes, and experience with multi-stakeholder processes alongside a strong sense of personal agency and a willingness to question personal assumptions and actions.

There are many excellent books and guides on how to facilitate, which we do not try to replicate here. Rather, we highlight some key questions about facilitation in the N4H context and outline how the required skills might play out in the different roles.

	Leadership	Project Management	Facilitation
Vision	<p>Holds a high-level strategic ambition for what is possible and achievable in this situation based on subject matter expertise.</p> <p>Is able to hold vision and be flexible and responsive to new ideas.</p>	<p>Understands and commits to the vision of the project with the skillset to attend to the logistics needed to scope the project in a systematic way.</p> <p>Has good organizational skills and attention to detail.</p>	<p>Holds a high-level systemic view of the situation and an ability to identify patterns at play and interrelationships between issues, and an ability to zoom in and out of different levels of abstraction.</p> <p>Has a high tolerance for uncertainty, is flexible and able to sense-make in real time</p> <p>Works iteratively.</p>
Convening legitimacy	<p>Makes connections to high-level leadership and across stakeholder groups at a political and pragmatic level.</p>	<p>Has legitimacy to organize logistics of stakeholder meetings</p>	<p>Has legitimacy to facilitate stakeholder gatherings using systemic practice</p>

Continued...

	Leadership	Project Management	Facilitation
Working with power	<p>Can engage with people at different levels within the wider system.</p> <p>Can attend to and seek changes in structural power issues.</p>	<p>Is aware of power issues at play and can prioritize important tasks and liaise with funders, country stakeholders and communities.</p> <p>Can monitor participation of different groups in process.</p>	<p>Can negotiate power issues as they arise as part of the scoping process and facilitate discussion on power issues that may arise during implementation.</p> <p>Can ensure the views of those with less voice or power are heard and taken on board.</p>
Communication	<p>Has strong communication skills, both written and oral, as well as a persuasive and engaging way of working with others.</p>	<p>Has strong writing and reporting skills.</p>	<p>Can communicate complex issues clearly and reflect patterns arising in system that need to be addressed.</p>
Listening skills	<p>Can listen with an open mind, be non-judgemental and build trust and convey understanding without compromising their own values.</p>	<p>Can listen with an open mind and be attentive to new ideas and data with an ability to analyse differences between new information and what they already know.</p>	<p>Can listen at a deep level to what is going on in the wider system that has the potential to produce the best possible future and use that sense-making to design and lead stakeholder engagement.</p>
Facilitation	<p>Facilitates meetings with individual partners to get buy-in.</p>	<p>Chairs project meetings.</p>	<p>Facilitates meetings between diverse stakeholders and internal meetings to explore process issues, as well as coaching, motivating, and asking critical questions.</p> <p>Can hold an open exploratory space with psychological safety, equity of participation and ways to handle conflict.</p> <p>Keeps focus on the situation, promotes ideation with the potential to learn and shift paradigms at a third-order level.</p>
Forging agreement	<p>Can recognize and negotiate towards feasible and sustainable solutions in context</p>	<p>Negotiates N4H funding relationship</p>	<p>Supports sense-making in real time. Synthesize complex information at a high level and find accommodations between different perspectives</p>
Support learning and reflection	<p>Is open to personal learning and reflection, being challenged and challenging others respectfully.</p>	<p>Is open to personal learning and reflection.</p>	<p>Holds primary responsibility for creating conditions for personal and social learning amongst team and social learning amongst stakeholders.</p> <p>Reflexive capacity to consider their own role and how their perspective, assumptions and beliefs might influence others.</p>

Part III: Practice

Essential Elements of Systemic Practice

Pulling It All Together

Summing Up



Essential Elements of Systemic Practice

The following sections of this Guide identify and describe particular methods and techniques that will be useful in developing your systemic inquiry. To be systemic, you need to incorporate methods that, when combined, address all seven essential elements.

1. Understand inter-relationships. It is often easier to observe inter-relationships and remain on the outside than to be inside and understand what they mean (and to whom), if and how to intervene and what the consequences might be. Systems practice includes understanding how complex sets of inter-relationships that through feedback processes create loops that reinforce each other, often leading to uncertain and unpredictable consequences.

2. Engage with multiple perspectives. People hold diverse perspectives, and those perspectives will influence their behaviour in your project. Therefore, you not only need to include and understand those multiple perspectives; you also need to actively engage with them to create a desirable and feasible project. In many ways systemic approaches seek to create innovation out of addressing differences rather than only responding to the 'group think' of focusing primarily on similarities.

3. Make critical boundary choices. No practice can include everything. Doing one thing means not doing something else; achieving something implies not achieving something else. As soon as you choose a purpose or identify a problem or a solution, you have identified and taken important boundary decisions about what to keep in or out of your practice. Holism is more about being aware of and being self-critical about the consequences of what is excluded than attempting to include everything.

4. Act collectively. Engaging with multiple perspectives implies collective action and decision-making. There are many different forms of collective action, and it is important to choose which ones are appropriate to your project and its context.

5. Focus on creative solutions. To clarify what the core issues are and what to do about them, you need to simplify the complex without being overly simplistic. Stepping back from reality for a while and exploring the ideal or hypothetical is an important step towards creative yet practical solutions.

6. Ensure action is desirable and feasible. Ultimately, reality intrudes on the most creative ideas. Systemic practice is focused on how to identify and manage contradictions between what would be desirable to do and what is feasible. That includes exploring your and others' values, power and capabilities to achieve sustainable projects.

7. Learn and reflect. Complex situations are dynamic and unpredictable. Actions often have unanticipated consequences. Thus, continuous learning and reflection underpin an iterative and evolving journey throughout the scoping process and beyond.

Treat the methods described here as a menu to select from. Some will be more useful to your situation than others. Feel free to use or combine them with other activities that are not in this list but which also reflect systemic practice.

1. Understand inter-relationships

In order to act, you need to understand inter-relationships as well as possible, so that you can address the core issues you have identified. In highly complex, dynamic situations, that is not easy. Unlike more predictable, stable, situations you cannot treat them as a piece of machinery to fix. Instead, it is more about identifying the patterns of interrelationships that emerge over time. Only once you have identified and understood these dynamics can you start thinking about ways of influencing patterns – either by enhancing those patterns that help you achieve your purpose, or by dampening the impact of patterns that are hindering your purpose.

To begin understanding inter-relationships and which could help or harm your project outcomes, you need to pose the following questions:

- What is the structure of the inter-relationships within your situation (i.e., how are the parts arranged)?
- What is the nature of the inter-relationships? (e.g., strong, weak, fast, slow, conflicted, collaborative, direct, indirect?)
- What patterns emerge from these interrelationships over time, with what consequences for whom?

In your own practice, you have many methods that address these questions. The systems field has additional ones that can enhance those methods. This Guide will draw on those methods.

The systems field has a long history of using diagrams to reveal and understand interrelationships. Two, in particular, can be very useful at different stages of your project or proposal development. In both cases, they can be done on your own as an individual exercise but are best done by people who hold different perspectives.



Focus on patterns of interrelationships - develop a radar for spotting, naming and discussing patterns.



When to use it

Rich pictures work well when you are still uncertain what the focus of your project could be, there are many conflicting factors interacting across different levels of the situation, and you are still developing a shared understanding of everything at play. It helps transition from looking at a messy situation to creating a systemic understanding of it.

In systems language, this is known as exploring your situation of concern before deciding what issues to focus on. You may think this sounds like conventional scoping or situational analysis, but often these *begin* with a problem definition. Instead, systemic analysis of situations *ends* with the problem or problems defined. Nothing undermines a rich picturing process more than someone saying ‘what we should do is...’ or ‘I think the problem is ...’.

Rich picturing is a visual way of exploring your situation of concern. It allows you to deepen your understanding of the situation and not let your problem get in the way of a more powerful way of addressing the issues that are concerning you and other stakeholders. At the end of a rich picturing exercise, you should be able to complete four or five statements that finish the phrase ‘this situation is something to do with...’ that are neutral and do not define problems or solutions. This can also be understood as “this situation is related to” or “this situation relates to”.

How to draw a rich picture

Rich pictures are best done by a group of people with diverse perspectives, with somewhere between 4 and 6 people per picture. You can split up larger groups, which gives the opportunity to compare and learn from different rich pictures of the same situation. If you are doing it online, make sure to have an inventory of prepared icons and emojis depicting both tangible (schools, hospitals, animals) and intangible (anger, slow, creative, collaborative) elements. For detailed instructions on how to draw a rich picture, refer to the following freely available publication: [Systems Diagrams: A Practical Guide](#).

Influence diagram

What is it?

An influence diagram gives a snapshot of the key factors that are influencing a situation right now. It is an illustration of anything that might influence a state of affairs, including events, people or things. It can include feelings, features, resources, organisational culture, or it can include a particular event or activity, or different people involved and the different types of things used within the situation. It is often a hand-drawn diagram using words with arrows going between different nodes. It is very similar to a mind mapping process, but more fluid as multiple nodes can connect. It is vitally important to understand that arrows imply that one aspect of a situation might influence another, it *does not* imply that one causes the other to happen.

Here is an influence diagram on the spillover of zoonotic diseases from animals to humans. Notice that it does not illustrate every possible influence of spillover – just those that were considered significant in this particular context.

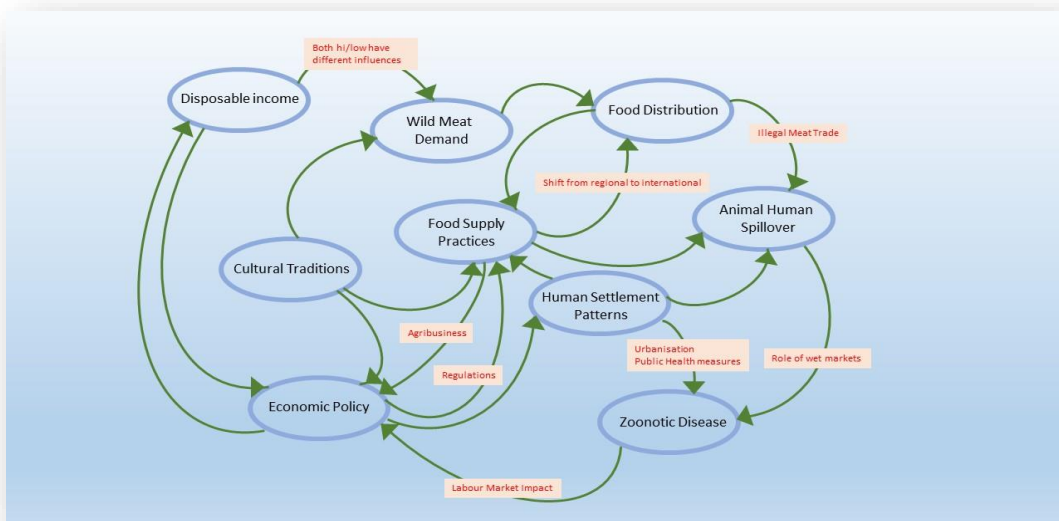


Figure 6: Influence diagram depicting zoonotic disease spillover

Why use it?

Complex situations that contain multiple problems that are each viewed through multiple perspectives generally defy causal analysis. The idea that we can fully understand how a singular action A causes result B within situation C is at best doubtful and at worst misleading. It is treating the world we live in as a machine that can be easily manipulated in predictable ways by pulling specific levers. That kind of thinking frequently leads to unanticipated and unintended consequences. Influence mapping takes a step back and explores the multiple and often subtle but important influences that contribute to the generation of problems, or the processes of finding solutions.

When to use it

Influence Diagrams work well when you have decided on the focus of your project, know which stakeholders are affected and have some idea of the important dynamics. Use it too early, and you risk ending up with an unintelligible wiring diagram that helps neither with predicting what might happen or understanding how things have happened. You can use it as part of your ideation process or your assessment of desirability and feasibility.

How to draw an Influence Diagram

For detailed instructions on how to draw an Influence Diagram, refer to the following freely available publication: Systems Diagrams: A Practical Guide.

Understand inter-relationships: reflection questions

What are the main elements in your situation of concern that drive its behaviour?

What people?

What 'things' (e.g., environment, weather, traditions, structures)?

What ideas?

What resources?

What values, perspectives and worldviews?

What is the nature of the relationships (e.g., strong, weak, conflicted, stable, close, weak, popular, unpopular, easy, difficult)?

How does the information flow around the situation?

How do resources flow around the situation?

What kind of contradictions are there and what are the consequences?

2. Engage with perspectives – how do people interpret reality?

Engaging with the ways in which perspectives affect people’s basic understanding of what the system is about is essential for systemic practice. These different views of how the world works and the results of these workings lead to very different ways of approaching the design of interventions in real-world situations.

Working out what kind of action (if any) is needed, what needs to be considered collectively, and how to handle the diverse perspectives present in that collective action are challenging but essential for successful systemic practice. How strong or fragile is this agreed collective action to sudden changes of circumstance? Later in this Guide we explore issues of collective action. How can you motivate people towards a collective task when some of the people who you need may not see the need for action, or may disagree with the proposed action?

Bend the beam of light back on what you are doing:

While objectivity isn’t possible, stepping outside the situation temporarily and looking back in...in other words, going up a level of abstraction to bend your attention back on what you are doing supports learning and reflection.

Positionality

As mentioned earlier, you are part of the system you are involved in, whether you ‘see’ it or not, and whether you like it or not. Nobody involved in the system – not you, nor the program’s funders, nor the local veterinary officer, nor the government’s policy advisor – can step outside the systems they are part of. You and your colleagues in your proposal development are all an intrinsic part of current systems as well as the new ones you are hoping to create. You are all working *in*, not working *on* your situation of concern.

Therefore, it is important to understand the existence and impact of your perspectives. Because of your lived experiences you will have built up mental models of what issues are and what needs to be done to solve them. It is also likely that all your professional training has been geared around solving problems and being pragmatic, and you are keen to get on with the work as soon as possible. One of the consequences of professional expertise is that your training will have encouraged the idea that your training provides you with the best way to solve a particular problem. That may indeed be the case, but systemic approaches suggest stepping back and considering honestly whether that is the case, as well as exploring alternatives.

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Two ways of engaging with multiple perspectives

Stakeholder roles and motivations

1. Identify stakeholder roles

A stakeholder is a role that is affected by or affects something or someone that is important in your situation or solution. The word 'role' implies that a single person can occupy different roles in your situation. Within your project a person could have a political role, a parental role, or a service delivery role. People juggle the contradictions of these roles in unpredictable ways. The more you can engage with the implications of those roles and juggling acts, the more firmly grounded your proposal will be. Don't forget to include your own roles.

2. Understand role actions and consequences

Identify what those roles do, what they are influenced by and influence, and with what results.

3. Determine motivations

Motivations are critical to gaining involvement in your task or commitment to your projects. Consequently, you need to determine what motivates people to carry out their roles; what their incentives are; what gets them out of bed in the morning. Again, don't forget to include your own role motivations.

Example: Roles and motivations related to Chagas disease in South America

Stakeholder (role)	Role action	Motivation interest	Framing
Pig Farmer	Cares for pigs Purchases pigs Sells pigs	Ensure production Support family financially	Productivity Profitability
Parent	Provides cultural and economic support to children	Children having good lives Children have a good education	Well being
Farm consultant	Provides advice on animal health	Better productivity Profitability Maintenance of regulations	Crop production Profitability
Public Health worker	Provides advice on human health	Avoiding people getting sick	Health
Money Lender	Lends money to farmers and families	Support family financially	Profitability
Policy advice	Develops / reviews governments agricultural policies	Coming up with creative solutions to big problems	Problem solving

4. Explore framings

We all look at the same set of interrelationships through our motivational lenses. People literally 'see' things in different ways because of those different roles. They notice different things and often will see things quite differently. Motivated by your service delivery role you might 'see' a compulsory immunisation program as a means of reducing the impact of disease, but from a political role it might be 'seen' as a system to reduce individual liberties. It is important to identify and explore these different 'lenses' or 'framings' that are associated with these role motivations.

The important thing to understand is that these framings are not either/or. They are all likely to be perfectly valid ways of understanding a situation and are present in that situation whether we like it or not. Interventions that ignore them are almost guaranteed to produce unanticipated consequences.

An easy way of identifying framings is to ask people to complete the following sentence (possibly after looking at their Rich Pictures or Influence Maps):

"This situation or proposal is something to do with..."

Example 1: The COVID-19 pandemic is ...

- Something to do with the spread of infectious diseases.
- Something to do with personal freedoms.
- Something to do with economic survival.

Example 2: The WHO Ottawa Charter for promotion of healthy behaviours frames a health promotion program as...

- Something to do with policies that do or do not promote healthy behaviours.
- Something to do with social environments that do or don't support healthy behaviour.
- Something to do with services that influence or discourage healthy behaviours.
- Something to do with information that relates to healthy or unhealthy behaviour.
- Something to do with affecting communities' (in the broadest sense) engagement with actions that do or do not promote healthy behaviours.

History lines

History lines are an excellent way of exploring different perspectives on what occurred in the past to reach a given situation. It is a group process best carried out in person rather than on-line.

Step 1: Construct a long piece of paper or have access to a very wide whiteboard. If you are doing the exercise online, a Miro board is ideal. At the right-hand side write 'Today', and on the left-hand side write a date in the past that the oldest person involved will have experienced. Between the two, write dates that more or less divide the timeline into five or six equal periods. Divide the paper into three horizontal sections (or have three pieces of paper). Label one section "You", the next section "Pandemics", or "Zoonotic diseases" or whatever is the particular area of focus and the final section "The World".

Step 2: Everyone then writes in the appropriate space what significant events happened according to the timeline. Allow plenty of time to complete this.

Step 3: In the debrief proceed along the timeline and allow people discuss their own contribution and why they feel the event was significant at the time and whether it is significant now.

Step 4: Participants finally discuss what similarities and differences there were in the explanations and what different perspectives and worldviews the History Line represents.

There are other benefits of drawing history lines. It is a good way of generating conversations about difficult topics in a neutral way. It also helps people understand each other's histories and experiences more effectively than the usual two-minute introduction. Plus, you have also developed an historical form of rich picture of the situation you are focusing on, rather than just a snapshot of the situation today.

Engage with multiple perspectives – reflection questions

Who or what are the key stakeholder roles and motivations?
What are the different ways these stakeholders complete the sentence 'This system is something to do with ...'?
What are the implications of these 'something to do withs' for developing, achieving and sustaining the purposes of your system?

What about your perspective? Reflection questions

How does your professional background impact on your understanding of the situation?
How does your relative position of power and bias influence that understanding?
How do your political allegiances, religious beliefs, gender, sexuality, historical and geographical context, ethnicity, race, social class, and/or disability status influence your approach to this work?
What do you believe about the way the world works, and about how knowledge is created and shared?
What do you believe are the core characteristics of our nature as humans?
What assumptions are you making about the transformative potential of this project?
What assumptions do you make about your own ability to take effective action?
What understandings and assumptions are fixed vs. fluid?
What has changed over the course of working in this area over time? What has not changed?

3. Make boundary choices – what is the right thing to do?

It is not possible to understand every single relationship at every possible scale. Nor is it possible to include every single perspective on that multitude of inter-relationships. At some stage, in order to do something, difficult choices have to be made about what gets included in your proposal and what does not. These boundary choices therefore determine what inter-relationships and perspectives are prioritized and which ones are marginalised or ignored.

The framings mentioned in the previous section on multiple perspectives can be considered boundary choices. For example, a person who frames compulsory vaccination as ‘something to do with public health’ has already drawn a boundary that will ignore or at least marginalize many of the things that will be important to a person who frames it as ‘something to do with personal freedoms’.

How to make boundary choices

Every project, indeed every action you take, involves boundary choices. Even when you cross the road, or shop at a local store, there is much that you are choosing to ignore or choosing to prioritise. The decision to walk on the other side of the road or grow your own vegetables so you don’t have to shop for them is a boundary choice.

Your project has no option but to make some important boundary choices; the question is which ones you should prioritize, since you cannot deliberate on every choice. Your project focus can only be part of your project's scope. So how do you get from scope to focus?

Here are two ways that it is done in some systems methodologies. You will notice that both approaches consider that one important boundary choice is around purpose. Most systemic practitioners consider that a system does not exist without a purpose. That purpose can be designed in from the beginning or perceived from its results. And as this Guide frequently mentions, different people will identify exactly the same set of elements interacting together as achieving different purposes depending on their perspective.

“

. Knowing which is needed and when is an art recognising that while you have some control of the process, you cannot entirely control the outcome.

”

Critical Systems Heuristics

Critical Systems Heuristics (CSH) is a powerful systems tool that identifies the key decisions that your project will need to address.

There are four areas where these key boundary decisions occur:

- Purpose: Who or what should benefit from the project?
- Control: Who or what should have the ability to control the resources necessary to achieve those benefits?
- Knowledge: Whose or what knowledge should be used to manage the resources used to achieve the benefits of your project?
- Legitimacy: Whose or what interests need to be considered in order to gain support so that the project sustainably achieves its purpose. [You need to include interests that are negatively affected by your project. Depending on their power and agency, your project may not survive their opposition.]

The section '[Focus on Creative Solutions](#)' describes a more detailed version of CSH.

CATWOE

CATWOE is part of Soft Systems Methodology, which is described in more detail at the end of this Guide. It stands for:

- Customers (C): Who (or what) should benefit from a transformation (T). The beneficiaries.
- Actors (A): Who use the resources provided by the Owners (O) for the Transformation (T) to take place
- Transformation (T): The change that takes place in the situation of the beneficiaries/customers (C) as a result of the actions of the Actors (A). Note that T is an outcome for C not an output of the activities of A.
- Worldview (W): The reason why T is a good thing to achieve.
- Owner (O): Those who provide resources to the Actors (A) and essentially determine whether the system exists. Essentially the system is answerable to O.
- Environment (E): These are the important factors that must be taken as foundational elements of this system.

Why is this a boundary-setting process and not a categorisation process? It is true that when you first do this exercise, you normally end up with a long list of multiple customers, actors, transformations, world views, owners and environments. However, that list just shows how impossible it is to include every single aspect of a situation in order to develop a coherent and feasible system to address a complex situation (in your case, a project proposal).

In order to focus your project and make it feasible, you have to decide who or what gets included or excluded from your CATWOE. And of course, once you reduce (for example) C to one or two beneficiaries, then that impacts who or what gets included or excluded from the other five items. It is an iterative process that ultimately allows you to describe in 50 words or less the focus (i.e., the boundary) of your system. The best way of wording this is:

A system to achieve T for C because W is the right thing to do. T will occur through the actions of A using the resources provided by O within the constraints and opportunities provided by E.

[Tip: Using the order TCWAOE is also a good way to develop your CATWOE]

CATWOE is a useful tool that can be applied in many different aspects of systemic practice. The Guide describes an additional use of CATWOE in the section on Focusing on Creative Solutions and it underpins the Snappy System processes described later in the Guide.

Make boundary choices – reflection questions

Which key inter-relationships are or will be privileged and which are or will be marginalised by the current or future system?

With what effect on whom?

What key perspectives (i.e., stakeholder roles, stakes, framings) are or will be privileged and which are or will be marginalised? With what effect on whom?

What purposes does your project fulfil? Who or what will benefit? Who or what will not?

Where does the boundary between control (ownership, power to say no) and autonomy (power to distribute and use) lie? What are the consequences?

What knowledge, skills and information are given high priority and what knowledge, skills and information are given less authority. What are the consequences of that?

How does the system claim legitimacy, especially in the eyes of those who have the power and agency to oppose it or not cooperate?

How can you manage the ethical, political and practical consequences of these decisions, especially those that cause harm or have the potential to cause harm because they exclude an inter-relationship or perspective?

4. Take collective action

One of the implications of engaging with multiple perspectives is the need to act collectively.

Collective action does not happen overnight. It takes a lot of time and commitment to create and sustain effective collective action. Some kinds of collective action, such as networking, have quite low demands on time and energy. Others, such as coalitions and partnerships, have much higher levels. Before deciding on which kind of collective action is needed, you should consider whether there are adequate levels of support and structure. If there are not, you need to be able to create them beforehand rather than risk unrealistic high or low expectations. If it is not possible to create them, you may need to reduce the ambition of your collective action to match what you have.

Therefore, it is a good strategy to assess:

What kind of collective action is necessary to achieve the purpose of the project?

What kind of collective action is realistic?

If the two do not match, then what can be done about this?

The table below identifies four common kinds of collective action: networking, cooperation, collaboration and coalition/partnership. The table was originally developed to inform an [Ecohealth program in SE Asia](#). It highlights the particular purposes each kind is best suited for and the necessary structures, processes and resources that need to be available to achieve those purposes.

“

*Creating change is about learning together
as much as about individual learning.*

”

Level	Purposes	Structures	Processes	Resources
Networking	<p>Provide dialogue and common understanding</p> <p>Mutual exchange to support each other's efforts</p> <p>Facilitate information exchange</p> <p>Create base of support</p>	<p>Non-hierarchical</p> <p>Loose/flexible links between participants</p> <p>Roles are loosely defined</p> <p>Communication channels are primary connection among members</p>	<p>Low-key leadership</p> <p>Minimal decision making</p> <p>Little conflict</p> <p>Informal communication</p>	<p>Variable time</p> <p>Minimal skill</p> <p>Minimal support</p> <p>Minimal finance</p>
Cooperation	<p>Serve collective needs.</p> <p>Limit duplication of services</p> <p>Ensure that tasks are done</p> <p>Simple problem solving</p> <p>Group seeks to influence decision making</p>	<p>Central team acts as communication hub</p> <p>Semi-formal links</p> <p>Links are advisory</p>	<p>Leaders who facilitate</p> <p>Ability to resolve differences</p> <p>Formal communication within the central team</p>	<p>Variable time</p> <p>Medium skill</p> <p>Medium support</p> <p>Variable finance</p>
Coordination	<p>Share resources to address common issues</p> <p>Link resources to achieve joint goals</p> <p>Merge resource base to create something new</p> <p>More complex problem solving</p>	<p>Central team consists of decision makers</p> <p>Roles are defined</p> <p>Links are formalised</p> <p>Group participates in decision making</p> <p>Group can make decisions but members will need to check with their own organisations</p> <p>Member organisations give up some parts of their own decision-making power and authority</p>	<p>Autonomous leadership</p> <p>Focused on issue</p> <p>Central and subgroup decision making</p> <p>Frequent and clear communication</p> <p>Conflict management procedures</p>	<p>Medium to high time</p> <p>Some skills at high level</p> <p>High support</p> <p>Variable finance</p>
Coalition or Partnership	<p>Shared vision and goals</p> <p>Build interdependent system to address issues and opportunities</p> <p>Complex problem solving</p> <p>Share resources</p>	<p>Consensus is used in shared decision making</p> <p>Roles, time, and evaluation are formalised</p> <p>Links are formal and written into agreements</p> <p>Member organisations subsume some of their own goals to the collective goals</p>	<p>High leadership, trust level, and productivity</p> <p>Ideas and decisions equally shared</p> <p>Highly developed communication</p> <p>Members able to champion the collective action</p> <p>No significant conflict between goals of network and goals of members or member agencies.</p> <p>Conflict resolution processes</p> <p>Group has the autonomy to take some decisions without needing to refer back to their own organisations</p>	<p>Extended time horizons</p> <p>High support from external bodies, participants' management and professional agencies</p> <p>Flexible financial arrangements</p> <p>Ability of members to get resources for the network</p>

Core questions when developing collective action

- What has been the history of collaboration, communication and partnerships in the project areas? To what extent has this been critical in establishing the network and its collective action? How can the impact of poor past experiences be managed; how can good past experiences be leveraged?
- What existing collective action mechanisms are there in the project areas, and how successfully can these be used?
- How can the relative power differentials between stakeholders be managed (see p??)? What are likely to be the consequences of this? In particular, how can this affect the ambitiousness of the project?
- In what way in what way should the projects funding objectives be influenced by the systemic process and feedback from stakeholders?
- How could centrally defined performance metrics help or hinder the development of a project's ability to network and engage in collective action?
- How influential will the political context be: nationally, regionally, locally? What boundaries need to be set around the project's network activities and collective action to accommodate these political contexts? How can any negative restrictions be limited in their effect?
- To what extent can stakeholders comprehend and be able to work on the interdependence of each other?
- How should diversity be handled? Diversity in terms of knowledge, experience, organisational size, organisational and personal cultures and traditions, sectoral standards?
- How much do stakeholders and participants need to understand, acknowledge and make allowances for the complexity of their task? How should key individuals handle these situations and with what results?
- To what extent do people feel positive about the purpose of the project and the role of collective action?
- How should people respond to the reality of resource scarcity – will it influence the wish to collaborate more or less?
- Which organizations need to really commit themselves to the project? What help is needed from sponsors to promote this commitment?
- What degree of autonomy do the network participants need to fulfil their roles and gain legitimacy from their own organisations for their decisions?

One way of putting this into practice is by exploring what is helping and hindering your intended collective action.

For instance, if you wish to establish a partnership:

Feature	What helps this happen	What hinders this happening	What needs to be done to boost the helps and reduce the hindrances
Structure			
Consensus is used in shared decision making			
Roles, time, and evaluation are formalised			
Links are formal and written into agreements			
Member organisations subsume some of their own goals to the collective goals			
Group has the autonomy to take some decisions without needing to refer back to their own organizations.			
Process			
High leadership, trust level, and productivity			
Ideas and decisions equally shared			
Highly developed communication			
Members able to champion the collective action			
No significant conflict between goals of network and goals of members or member agencies.			
Conflict resolution processes			
Group has the autonomy to take some decisions without needing to refer back to their own organisations			
Resources			
Extended time horizons			
High support from external bodies, participants' management and professional agencies			
Flexible financial arrangements			
Ability of members to get resources for the network			

Take collective action – reflection questions

What kind of collective action matches the purposes of your project proposal?

What kind of structures, processes and values are necessary for this kind of collective action?

How can you develop these structures, processes and values?

If you cannot develop them, what kind of structures, processes and values are feasible, and what kind of purposes can they realistically achieve?

Who should, and should not, be included in any collective action?

5. Focus on creative solutions

Creating something new calls for attention to the world of possibility and the hidden potential in what might be taken for granted. This is about allowing the imagination some space to be creative. Fundamentally, it is about allowing something new to emerge and create a break from repetitive patterns of doing things the way they have always been done.

Working in this conceptual space is not always easy to do. Commonly, people tend to let the current realities get in the way of creative solutions. “We can’t do this because ...”, “we tried this before and ...”. Or they make the idea’s description so complicated that it is not clear what anyone could do to make reality better. This kind of thinking is where achieving creative solutions can often get stuck. Regardless of which of the many techniques you use to move into a creative space, they all involve similar processes of unsticking how you think about the current situation.

This includes:

- Questioning and reassessing the purposes of your project.

- Suspending judgements about the way you think the purpose should be or could be achieved.

- Redirecting attention to where there are seeds of potential for another way of doing something.

- Letting go of expert roles and hierarchies, while still using that knowledge and expertise.

This section presents a range of ways of harnessing creative processes in a way that can lead to fresh innovation in different contexts.



Broaden and expand on what works

Finding or creating functioning pockets within the wider system by working on something that is challenging but where you have or can develop agency to work is likely to have more effect than attempting to ‘fix’ a broken system.



Ideation workshop processes

Ideation processes aim to establish a foundation or reference point for later comparison with reality. They are often referred to as ideal systems, idealised futures, scenarios, visions, or preferred impacts.

The purpose is *not* to develop an unrealistic and imaginary future that loses relevance when confronted with reality. Instead, the goal is to create a foundation or a reference point for later comparison with reality. That later comparison will identify actions that can (and cannot) be taken to shift the current reality *towards* that desirable future state, even if it won't achieve it. In other words, the focus is on providing insights into what needs to be done in the present, rather than setting unachievable goals.

In systemic practice, this process is often facilitated by developing visual models of the ideal system. However, it is crucial to understand that the aim is to generate insights, not predictions. Professional modelers emphasize the importance of keeping the models as simple as possible without being overly simplistic. Modelling that ends up like wiring diagrams or bundles of knitting are ineffective ways of generating the kinds of insights that you need at this point.

For example, if your project aims to improve animal husbandry, you would initially focus on core ideas of what an ideal animal husbandry system might look like. This provides a basis for determining what can be done to enhance the current situation that shifts things towards that desirable but imaginary future. That allows you to more easily generate ideas about what you would like to see without allowing reality to intrude too early or making the 'ideal' overly complicated?

Ideation workshops can be designed to immerse participants in a future space both physically and mentally, prompting them to describe how the project or current situation looks, feels, and behaves. To achieve this, two simple actions help create that look and feel:

- The space, whether physical or virtual, should evoke a sense of the future. It can be as straightforward as a large sign that says "Welcome to 2030."
- The conversation about the future is carried out entirely in the present tense. You are discussing something that is happening, not something that will or should happen. The instructions could be as simple as "You are about to walk into a space where everything you wish to happen has happened and as little of what you feared could happen has happened. Describe how that situation looks, feels, operates and creates."

Appreciative inquiry – amplifying what works well

You can spend a long time problematizing the situation that you are working on and focusing on what needs to be changed to fix that problem. Sometimes this can lead you to miss some good things that are already happening on the margins. Or once you have found something that works, you might be under pressure to move on to the next thing that needs fixing rather than reflecting on what was in your control or the control of another stakeholder that contributed to the success. Imagining the ideal starts with a positive framing on which you can then broaden and build as you develop your implementation plan.

Amplifying the positive is not an excuse for ignoring the reality of what is going on or excusing poor practice. It is a way of making sure that you are not missing something good that is currently out of sight. These good things can be used to generate ideas and insights for building on what already works well rather than focusing on fixing things that don't work.

One way to generate creative and innovative ideas for the future stems from an approach called appreciative Inquiry, which focuses on building and expanding on what is already working well and considering how to amplify its impact.

During the ideation phase, participants engage in a collaborative process to imagine possibilities, envision an ideal future, and generate ideas that align with the purpose of the project.

Here are some key elements and activities that typically take place during the ideation phase of an appreciative inquiry:

Peer interviews: You can organize one-on-one or small group interviews to collect stories and experiences related to positive moments, successes, and strengths within your situation. These interviews help uncover the best of what is and generate inspiration for the ideation phase. It works well when these are peer interviews where one person listens to the other for a set period of time using simple prompts like “tell me what else works well? What are you proud of? What surprised you in a good way?” And then swap roles. The key is not to interrupt the person speaking and avoid analysis of what they say. It helps to summarize back to them what you heard them say and ask for clarification afterwards.

Group gathering: You then bring everyone together to share the insights and stories gathered from the interviews, highlighting the positive aspects and successful experiences. This sharing process helps build a shared understanding of the strengths and possibilities already at play in the system.

Brainstorming: Use creative methods to generate ideas, solutions and possibilities that build on what is working already, encouraging participants to think beyond constraints and limitations to explore new perspectives. You can use creative methods that shake up problem-focused thinking and promote ownership and commitment. You can also draw on many of the other tools presented here – as long you do so from an appreciative perspective. For example, you might use backcasting or the three horizons model in a way that capitalizes on the positive contributions that each role plays in developing the new solution.

Converge and prioritize: Once a pool of ideas is generated, you then review and analyse the ideas, identifying common themes, patterns, or potential areas for action. You then prioritise the ideas based on their potential impact and feasibility (see next section).

Crafting affirmative propositions: Create a list of affirming propositions or statements that capture the envisioned future state. These statements serve as guiding principles and aspirations for your project, against which the plan should be tested.

Expand CATWOE

If you used the CATWOE process in the boundary setting process, then you can develop an ideal version of the system that it describes. What would be the logical consequence of a system that was described by CATWOE?

You do this by creating a very simple model of your ideal system that is based on the elements identified in the CATWOE. And to keep things simple, in terms of ‘elements interacting together’ there should be no more than 9 elements and no less than 5. More specific models can be developed for particular sections later. Pulling it All Together describes what these diagrams can look like.

Expand Critical Systems Heuristics

The full version of Critical Systems Heuristics expands the four basic questions into twelve more detailed questions. The actual phrasing of the questions will vary depending on the focus of your project.

When used for ideation, these questions need to be phrased in a ‘should’ or ‘could’ mode.

Critical systems heuristics questions in the 'should' or 'could' mode

Here is an example of the twelve questions used in a [USA project](#) seeking to establish collaborative action (here called 'voluntary stewardship') in the agribusiness sector around animal husbandry and disease prevention. In your project, you would modify the language of the questions to reflect your context.

Purpose

- Who or what should benefit from the voluntary stewardship of antimicrobials, and how?
- What should be the purposes of voluntary stewardship; i.e., what goals should it aim for in order to deliver to the beneficiaries?
- What should be the key measures of success of voluntary stewardship?

Control

- Who should be seen as the key decision takers; i.e., have the authority to change who should benefit, what the purposes should be, and how success should be measured?
- What components (resources, people, policies, etc.) should be under the control of those decision takers?
- What is essential for delivery of the benefits and purposes, but should not be under the control of the decision takers and instead delegated to those responsible for administering the resources?

Knowledge

- As well as the decision makers and administrators, who should be involved in delivering the benefits and goals?
- What should count as the necessary expertise to be involved; i.e., who should be considered an expert and what should their roles be?
- What are the key factors about the knowledge and skills used that will guarantee or increase the likelihood of success?

Legitimacy

- Other than the intended beneficiaries, who or what could be affected (positively or negatively) by the activities of voluntary stewardship? Should they be represented in decision making, and (if so) how?
- To what extent should those negatively or positively affected be able to retain independence? Either by opting out of the process, or by seeking to reduce any negative effects on their interests?
- Upon what core values and assumptions should voluntary stewardship be based?

Scenario development

Scenario development is a widely used method of exploring different notions of what a future could look like through different framings; different 'something to do with...' or different possible trajectories of contextual factors (e.g. climate change, drug improvements). Scenario development does not try to *predict* the future but provide *insights* into how to create resilience to whatever the future turns out to be. Indeed, one common problem experienced using scenario methods is that people start discussing the probability of the generated scenarios rather than exploring the insights that the scenarios provide.

Scenario development is an eight-step process :

Step 1: Analysis of the task: the aim of this step is to analyse the subject of the investigation (a company, a group of products) in the present situation.

Step 2: Analysis of influence: the aim of this step is to identify the fields of influence relevant for the subject of investigation. It is advisable to do this step in a participatory setting (e.g., workshop). These fields of influence may comprise:

- The socio-economic, geographical and politico-institutional environment;
- Particularly important action strategies of various actors (stakeholders).

Within these fields of influence, specific factors of influence are identified. These factors (ecological, political, technological, social and economic) are brought into a coherent framework to derive plausible statements on the dynamics of the relevant environment that influences the subject of investigation. The factors can be rated in terms of their importance for the future and the degree of uncertainty as to their occurrence:

Importance	Certainty	
	High	Low
High	Major known factors that must be taken into account	Volatile trends and key factors (including negative factors)
Low	Other known factors that may be taken into account	Volatile trends that right now have little effect but need to be considered

Step 2, to combine and recombine them in different ways to outline alternative developments. For example, if animal vaccine supply has been selected as a main influence factor, whether these are copyright-free or not. Either type of vaccine source may be scarce or abundant due to different conditions.

Step 4: Bundling of alternatives: the aim of this step is to examine and compare the most plausible and instructive alternative developments identified in Step 3, with respect to their consistency, compatibility and internal logic. This is done in a discursive way. First, the alternative developments are described in the form of a short narrative. These narratives are then juxtaposed and discussed concerning their plausibility and distinction from each other.

Step 5: Scenario interpretations: this is the decisive step for reducing the complexity of possible futures. The emerging alternative developments are packaged into consistent scenarios (future images). There should be at least three scenarios: Two extreme scenarios (A and B) since the more you go into the future, the less you can predict what will happen. In addition to the extreme scenarios, there should be at least a hypothetical description of the “baseline scenario” – extrapolation of the most probable combination of factors.

Step 6: Analysis of consequences: the aim of this step is to derive, on the basis of the scenarios, possible opportunities and risks, to assess them and to define appropriate responses. This eventually leads to the elaboration of a fourth hypothetical trajectory – the “most desirable scenario”.

Step 7: Imagination and analysis of possible disruptive shocks (“wild cards”): the aim of this step is to list possible events which might suddenly arise, significantly influencing or disturbing the situation (either in a positive or a negative direction). The importance of these events is assessed and adequate responses are designed.

Step 8: Scenario transfer: the aim of this step is to formulate a guiding strategy, on the basis of the opportunity- and risk-related responses derived in Step 6, and to break it down into more concrete planning steps, delegating the operational part to the responsible stakeholders (of cooperation systems) or departments (of organizations or enterprises). This Guide deals with Step 8 more comprehensively in the next chapter ‘Make the desirable feasible and sustainable’.

Backcasting

Backcasting is a common method for developing future-focussed strategies. The idea behind backcasting is to start at the desired end point and working backwards to the current situation in way that is not constrained by current realities. Backcasting starts with the outcome of what you are seeking to achieve, and then you identify the step or steps that immediately precede that step. You then step back from those steps and identify the step (or steps) that immediately precede that step. And repeat until you arrive at steps that can immediately be applied to the current situation.

There are many guides to backcasting freely available online. One we recommend is in [The Future’s Toolkit](#) by the UK Government Office for Science.

Focus on creative solutions – reflection questions

What are the desired purposes of your project proposal?

Who or what should and should not benefit from those purposes?

What are the essential components that will logically deliver those purposes?

What values and worldview underpin those purposes and components?

Who should control the resources necessary to achieve those purposes?

Whose knowledge and skills should you include in your project?

What important assumptions are you making?

How much have you allowed 'reality' to creep into your 'ideal'?

6. Make the desirable feasible and sustainable

Systemic practice is ultimately about closing the gap between what is desirable and what is feasible. Great ideas can fall when faced with reality. You will already use many techniques to test the feasibility of your project such as risk analysis and matching financial resources to actions. Build on them and keep refining your practice. In addition, here are some approaches commonly used in the systems field that are geared towards ensuring feasibility, viability and sustainability.

Ensure feasibility

Three Horizons Framework

Three Horizons is a useful stepping stone between the previous section and this section. It offers a simple way to structure a conversation around the level of ambition you are applying to your ideas and what will be needed to make them desirable as well as feasible. It can also be useful if you reach a stuck point amongst stakeholders and are unsure how to unstick the conversation and move on.

The first horizon (H1) involves optimizing and refining current practices, ensuring the efficient delivery of existing services. It is essentially business as usual projected into the future. This may imply modifications to existing veterinary practices, improving disease reporting, or streamlining existing public services.

The second horizon (H2) focuses on innovation and the exploration of new approaches but still within the current framework. This could include adopting emerging technologies in disease detection, or piloting innovative public policies. In some ways it is about preparing for the more radical aspects of the third horizon.

The third horizon (H3) explores more profound and transformational change. It envisions entirely new ways of doing things based on completely different premises or paradigms. This might involve reimagining food production models or even our understanding of what food production is in a climate change world, implementing healthcare strategies that move far away from ideas of health as focused on disease, or changing the role of public services.

“

*The very act of asking the right questions
at the right time changes the system,
forcing critically thinking*

”

Here is a Three Horizon framework used in a biodiversity workshop setting, with core questions to pose and some methods used to do it.

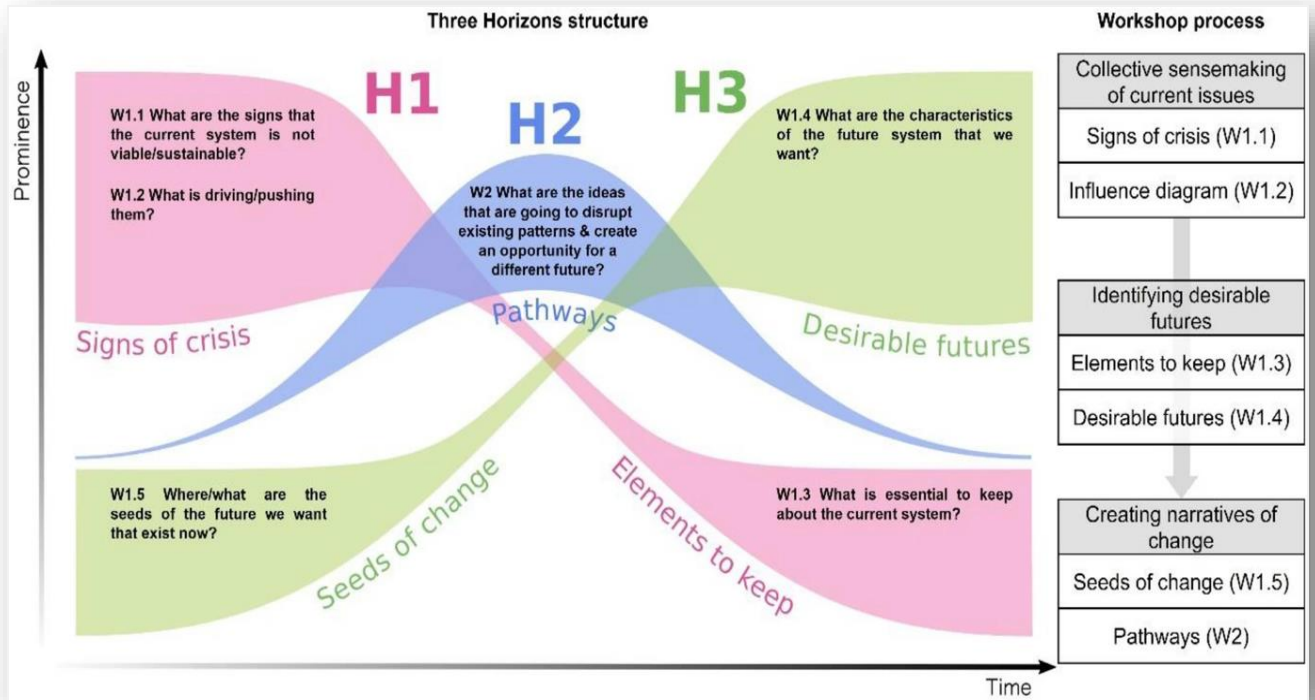


Figure 7: Three Horizon framework

Your scoping process will need to consider all three horizons. That requires promoting conversations identify and address the tensions between those three horizons, that bridge any gaps and recognise the importance of the different horizons and what they offer your project.

These discussion will include:

What horizon is your project focused on: sustaining business as usual in the immediate term, trying out new innovations to learn from them, engaging with creating the ground for an ideal future that does not rely on things being the way they are now?

How can you making provision for navigating the tensions and dilemmas between Horizon 3, Horizon 3 and Horizon1, and the subtle processes of change, new ways of working, new capacities, new structures even, required to navigate the transition between them?

To discuss these issues within your project there needs to be room for those who are skilled about optimising current practices, those who are able to ‘see’ the issues through completely different lenses, and those who are skilled at exploring pathways between the two.

Using a three horizon framework helps unstick in two ways:

1. It recognizes that you need to respond to and keep up with the pace of technical and social changes during the life of your project. Timescales between innovations are getting shorter. New disruptive patterns such as potential pandemics, developments in artificial intelligence, climate and political instability, make it hard to anticipate the future based on past experience.
2. It helps manage different interests of your stakeholders. Some will wish to focus on improving current practice (Horizon 1), some will be thinking far into the future (Horizon 3) and some will be concerned about becoming more able to respond to change (Horizon 2). All orientations are important and this process provides a way to acknowledge them and move forward.

Power

One of the most critical aspects of your project is who has what power and authority to do what. Therefore, it is worth considering what actually constitutes power and how it impacts on your project. For instance, how can any negative impacts of power (e.g., marginalization, victimization, corruption) be addressed? In the key boundary choice between control and autonomy, who has and who should have the power to make final decisions?

This Guide explores two aspects of power: types of power and where power lies (comes from).

Different types of power

There are four ways of understanding different types of power: power over, power with, power to and power within. The last three offer positive ways of expressing power that create the possibility of forming more equitable relationships. By affirming people's capacity to act creatively, they provide some basic principles for constructing empowering strategies.

Power Over

The most commonly recognized form of power, power over, has many negative associations for people, such as repression, force, coercion, discrimination, corruption, and abuse. Power over is seen as a win-lose kind of relationship. Having power involves taking it from someone else, and then using it to dominate and prevent others from gaining it. In politics, those who control resources and decision-making have power over those without. When people are denied access to important resources like land, healthcare, and jobs, power over perpetuates inequality, injustice and poverty. In the absence of alternative models and relationships, people repeat the power over pattern in their personal relationships, communities and institutions.

Power with

Power with has to do with finding common ground among different interests and building collective strength. Based on mutual support, solidarity and collaboration, power with multiplies individual talents and knowledge. Power with can help build bridges across different interests to transform or reduce social conflict and promote equitable relations. Advocacy groups seek allies and build coalitions drawing on the notion of power with.

Power to

Power to refers to the unique potential of every person to shape his or her life and world. When based on mutual support, it opens up the possibilities of joint action, or power with. Citizen education and leadership development for advocacy are based on the belief that each individual has the power to make a difference.

Power within

Power within has to do with a person's sense of self-worth and self-knowledge; it includes an ability to recognize individual differences while respecting others. Power within is the capacity to imagine and have hope; it affirms the common human search for dignity and fulfilment. Many grassroots efforts use individual storytelling and reflection to help people affirm personal worth and recognize their power to and power with. Both these forms of power are referred to as 'agency' – the ability to act and change the world – by scholars writing about development and social change.

A process to address different types of power

This process is based on the principle that just identifying 'power over' is not enough on its own. Indeed, it can demotivate people.

Step One: Decide Scale

Within your project, there are three main areas where you might want to investigate and address power:

- The power issues within the group that is developing your project proposal.
- The power issues within your proposed project.
- The external power issues that will impact on your proposed project.

The first task is to decide which of these you wish to work on – just one, or all of them?

Step Two: Analyse Power

First, disentangle the different types of power, according to the four types of power. Next, identify the aspects of the group, project or project context where power is important. Then describe how that power is, or is likely to be, expressed. These expressions of power could enhance or hinder the group process, the project delivery and the overall feasibility of the project.

Aspect	Type of Power	How power is expressed

Step Three: Determine Responses

Where power is expressed in ways that enhance performance, discuss and determine how that power could be sustained and strengthened.

Where power is expressed in ways that may hinder performance, discuss and determine how the impact of that power could be reduced, or translated into a more beneficial type of power.

Dimensions of power – the Power Cube

Sometimes power needs to be assessed and addressed more deeply. The Power Cube is useful for these circumstances.

The Power Cube, developed by the Institute of Development Studies at the University of Sussex in the UK, has been widely used both as a diagnostic tool and as a means of strategizing, planning and sustaining projects in development settings.

The Power Cube is a framework for analysing the levels, spaces and forms of power. It is particularly useful to explore how different dimensions of power interact with each other. It lets you visually map yourselves and your situation, including other actors, relationships and forces, and then look at possibilities for movement, mobilisation and change. It allows you to plan advocacy and to find entry points for action. In the description below, potential strategies are in *italics*.

Spaces of power

Closed: Decisions are made by a set of actors behind closed doors, without any pretense of broadening the boundaries for inclusion. Closed spaces are where elites make unilateral decisions, without the involvement or consultation of other groups. *Strategies to open up closed spaces often focus on greater transparency, rights to information and disclosure and public accountability for what goes on behind closed doors.*

Invited: Demands for participation have created opportunities for involvement and consultation, usually through invitation from various authorities, be they government, supranational agencies or non-governmental organizations. Invited spaces may be regularized or one-off consultations. *Strategies to strengthen participation in invited spaces include gaining knowledge and expertise on key issues and regulations, and learning the arts of public speaking, negotiating and compromise. For many previously excluded groups who have been used to demanding that closed spaces be opened up, or that they get to participate in their successfully claimed spaces, this may require new skills.*

Claimed: These are spaces that arise through the efforts of those not included in closed or invited spaces. *These spaces range from ones created by social movements and community associations, to those simply involving natural places where people gather to debate, discuss and resist, outside of institutionalised policy arenas.*

Levels of power

Global: Globalization and new forms of global governance have created a wide array of formal and informal, state and non-state spaces for participation and influence at levels beyond the nation-state. E.g., the massive growth of major online or privately owned conglomerates both help and hinder agency at a local and national level.

National: Nation states still wield considerable power despite global agreements and technologies that operate independently of nation state priorities.

Local: In public sector terms, local governments have considerable power in many countries. At a smaller level, communities or community-based organisations are often significant loci of power.

Exercise examining different dimensions of power

While the Power Cube doesn't necessarily resolve power issues, it helps to stress how important it is to deliberate more precisely on the implications of an intervention on the various power relationships operating within your proposed project.

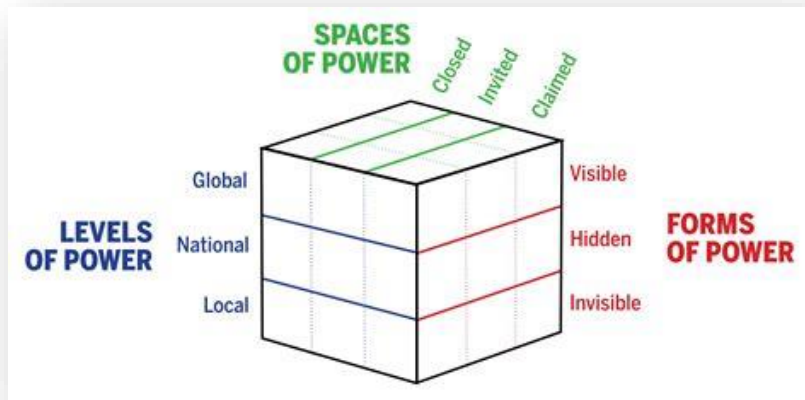


Figure 8: The power cube

The power cube has three dimensions:

- Forms of power – Invisible, Hidden and Visible
- Spaces of power – Closed, Invited and Claimed
- Levels of power – Local, National and Global scales

Forms of power

Visible: These are visible sources of power, often in formal institutions such as governments and professional bodies but also include rules, structures and procedures. Those in positions of power use such procedures and institutions to maintain control. Through visible power, it is possible to understand who holds that power and potentially open to influence. Having access to these institutions and their political processes might give you the ability to influence them, which makes them relatively open to influence. When that is the case, exactly who holds that power can be relatively clear.

Hidden: Hidden forms of power are used by vested interests to maintain their power and privilege by creating barriers to participation, by excluding key issues from the public arena, or by controlling politics behind the scenes. They may occur not only within political processes, but in organizational and other group contexts as well, such as workplaces, NGOs or community-based organizations. Strategies which address this form of power focus on strengthening people's voices and capacities to speak out, mobilising and organizing to overcome the barriers to participation, using research and media to challenge how issues are framed.

Invisible: Hidden power is at least acknowledged and can be confronted. In contrast, invisible power is unknown. In this form of power, people may be unaware of their rights, their ability to speak out, and may come to see various forms of power or domination over them as natural or at least unchangeable, and therefore unquestioned. Strategies for challenging invisible power involve approaches like awareness raising, adult education, participatory research to validate people's own knowledge, uses of the media and popular communication methods to challenge dominant stereotypes and discourses, changes in approaches to schooling and socialization, etc.

A way of examining power issues within your project proposal is to complete the matrix below, preferably in a facilitated discussion with other stakeholders who may have a different assessment of how power is expressed and how to manage it. What’s more, your own position in the situation will affect how you perceive these three dimensions. What is hidden power to one person is visible power to another.

	How is power expressed in your situation?	Desirable: How should it be expressed in your project	Feasible: How should any changes in power types be managed
Forms of Power			
Invisible			
Hidden			
Visible			
Spaces of Power			
Closed			
Invited			
Claimed			
Levels of Power			
Local			
National			
Global			

Promote Sustainability

One of the authors of this Guide helped evaluate a funding program that financed various community projects over a three-year period. One task was to evaluate the sustainability of these projects. The evaluation revealed that projects that incorporated sustainability into their initial design and planning were more likely to be sustained than those that started addressing sustainability later in the project. In other words, sustainability is a design issue as well as an implementation issue. (Refs 1 & 2)

What is sustainability?

The concept of sustainability is applied in different ways that imply different design strategies. In your proposal, we suggest you decide on and explore three kinds of sustainability:

1. Sustaining a specific activity

A particular activity continues indefinitely as an identifiable project. For instance, an organisation is funded to organise a series of meetings between agribusinesses, health professionals and community leaders for a three-year period. Once that funding ends, another body agrees to continue the funding.

2. Sustaining the capability to sustain outcomes of an intervention

A particular activity does not continue as a discrete intervention. However, the result of the original intervention is sustained by other activities, or is able to work on developing similar outcomes. In most cases this is because capability has been built within one or more stakeholders and the original activities blend in with the overall way they do business. So, for instance, if the intended outcome was that agribusinesses and health professionals eliminated poultry cages, the process of achieving that becomes business as usual for all those involved, even though the original liaison meetings no longer take place.

3. Sustaining the idea or principles underpinning the intervention

The project may no longer exist and even the original intended outcome may not be sustained, but the ideas or underlying principles that informed both continue. So, for instance, the idea of closer relationships between agribusiness and health professionals originally developed to eliminate poultry cages, may be sustained by seconding staff between organisations to work on a range of other issues.

A checklist of actions that promote sustainability

On the next page is a checklist drawn from the sustainability literature on factors that promote sustainability of activities, outcomes and ideas. It is important to note that any single project does not have to check all the boxes, but generally the more that are checked the more likely the project, outcome or idea will be sustained long-term.

What features of a particular activity, intervention or idea indicate or promote sustainability?	
Satisfies identified needs	The activity, intervention or idea is designed to address specific, identified stakeholder needs. In complex situations, an activity or intervention is aware of and able to respond to changes in needs.
Funding sources	The activity, intervention or idea has diverse funding sources. This may reflect broader support from a range of organizations or increased opportunity to secure subsequent funding from other sources. The earlier in the life of an intervention that this is addressed enhances sustainability.
Forward planning	The intervention actively plans and strategises for sustainability from the very beginning.
Transparency	There is transparent communication between the people involved.
Adequate and appropriate resources	Adequate and appropriate resources support the activity, intervention or idea. These resources include people, finance, raw materials, knowledge and skills.
Scope for activities to be incorporated in existing organizations	The intervention or idea translates into activities that can be readily incorporated into the everyday operation of existing organizations and ongoing programs.
Project effectiveness	The activity or intervention is able to demonstrate effectiveness, i.e., satisfactorily fulfils an acknowledged need with credible evidence.
Regular monitoring and evaluation	Regular monitoring and evaluation enhance the sustainability of activities, capacities and ideas if the monitoring and evaluation helps focus efforts, identify and resolve problems early and/or provide better evidence of effectiveness.
Marketing	Projects that effectively communicate their achievements.
ORGANISATIONAL COMPONENTS	
What particular organisational features indicate or promote sustainability?	
Project/organization alignment	The extent to which the activity, intervention or idea is aligned with and incorporated into the host organisation's policies and procedures, and to which the host organisation establishes resources that preserve lessons learned.
Incorporation	The activity, intervention or idea is incorporated into existing or larger organizations or projects.
Project champions and effective leadership	The activity, intervention or idea has internal and external champions and support from senior leadership of the organization.
Organisational stability and routinization in "simple" contexts. Organisational flexibility and adaptability in "complicated" or "complex" contexts.	<p>Relatively simple interventions with relatively predictable links between activity and outcome operate best in a stable organisational setting that has well-established, routinized procedures and goals.</p> <p>More complicated or complex interventions that are context-sensitive and with less predictable links between activity and outcome operate best in organizations that are flexible, with opportunities for mutual adaptation.</p>
ENVIRONMENT and CONTEXT	
The ways in which the activity, intervention or idea relates to specific and relevant aspects of its environment or context	
Community support and ownership	Interventions that engage in diverse activities to garner community support. Interventions that engender a sense of ownership from within stakeholder communities e.g., influence, control, responsibility, accountability for.
Partnerships with other organizations	Intervention with diverse and effective partnerships.
Alignment with political & economic climate	Projects aligned with current policy and funding priorities.
Environmental turbulence and unknowability	In turbulent and unknowable environments, interventions need to be able to "steer" their way through ambiguous and changing external contexts, uncertainties about the environment and handle shifting power structures. They need to have flexibility to adjust to unanticipated negative events and impacts, and to exploit unanticipated positive events and impacts.

Assumption Surfacing

Many planning documents require identification of assumptions (e.g., logframes). That is a very good idea. If a key assumption is wrong, or even worse starts off right but becomes wrong, then a project could easily cease to exist, fail to reach its desired outcome, or generate unintended and undesirable outcomes.

The problem is that, like boundary choices, we make thousands of assumptions in any single project. Some are important and some are trivial. How do you decide which ones you need to check and continue to monitor to ensure sustainability?

Another challenge is that the word 'assumption' is used to mean different things. For the purpose of assessing the feasibility of your proposal, this Guide uses the word to mean things that your project depends upon to be true without agreed proof that they are indeed true.

For instance, the statement that people need to know about an N4H meeting in order to participate in it is clearly true. It is not an assumption. Your task is to design the process to make sure that it happens. On the other hand, you probably do not know if it is true that people attending the N4H meeting have the ability to contribute to informed decisions. It is an assumption. It may be right, it may be wrong. You may be able to find out after the meeting, or you may never know. But if you know it is an assumption you can find ways of ensuring that it is more likely to be true than false. Say by restricting attendance to particular professional groups. Or you can ensure that the assumption is less critical. For instance, you could design the meeting to ensure that it can handle different degrees of knowledge.

The trick is to identify which of the many assumptions you make about the meeting are most unknowable and at the same time important. Here is a simple method for identifying the assumptions you need to focus on and take appropriate action.

Step One

Identify factors that may help or hinder your project and about which you are not entirely certain.

Step Two

Distribute them in the following grid.

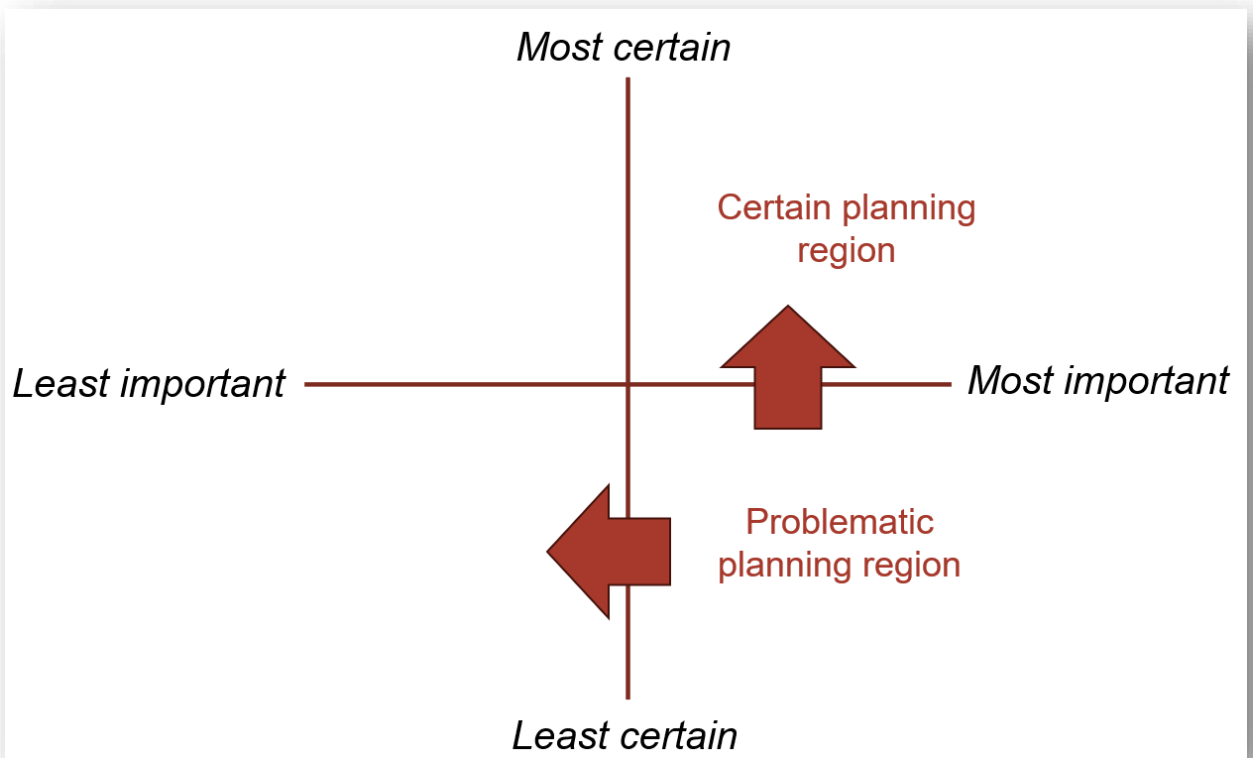


Figure 9: Assumption surfacing grid

Step Three

Working with the items in the lower right-hand quadrant:

Explore whether and how to change the assumptions into a known and accepted 'fact'

Design strategies that will increase the impact of assumptions that are helpful to the project

Design strategies that will reduce the impact of assumptions that are not helpful to the project

Step Four

Introduce the strategies into your project plan

Make the desirable feasible and sustainable – reflection questions

How feasible is your project?

What are the important issues of power in your project and how have you addressed them?

How viable is your project?

What are the key parts of your project that need to be in balance with each other?

How sustainable is your project?

What do you wish to sustain – the activities, the results or the ideas behind your project?

Which strategies included in your project proposal will promote those sustainabilities?

How are you going to manage the project's key assumptions?

7. Learn and reflect

Why learning and reflection are core tenets of systemic practice

Learning in real-time is challenging when climate collapse and zoonotic spillover pose such real and immediate threats. The current context is unprecedented and contains much uncertainty. There may be political instability and there are likely to be marked disparities in power structures.

This can make negotiating agreement difficult. Power holders might intervene or ignore the project and its potential. Engaging crucial stakeholders might become tricky and genuine engagement hard to secure. There may even be attempts to “capture” the project and bend it towards a different purpose. Not only will the project need to be resourced with the right people, but also with a strong focus on continuous learning and reflection at the individual, team and wider stakeholder level. Flexibility and dexterity are key.

You need to be alert to how you are contributing to the situation, as well as to changes in the environment in which you are working. This is a third-order learning stance (see later) that recognizes that different aspects of the situation are interrelated and that you are also an actor influencing the situation.

The first step is to sense-make in real time. This is a complex process of making sense of the subtle influences of perception biases and motivations at play in a situation that support making sense of what's going on. You are continuously learning, either consciously or unconsciously, so reflecting on how that learning is helping or hindering the process of developing your project is hugely important. Mryon Rogers’ maxim states that the process you use to get to the future will determine the future you get.

“

All learning is situated - we learn in context and by doing and reflecting.

”

Deepening your learning

Developing a learning mindset means operating across different levels of abstraction. Many of us operate across the different levels laid out below in different situations and can sometimes act from all three within the space of a single day. When it comes to creating third-order change, it will help to focus on cultivating second and third-order learning. It will also be important to be reflexive at times and 'bend the light beam' to review how you yourself are helping or hindering the progress.

Fig.10 poses questions about how you – individually or collectively - are pitching the level of ambition for your project and what you are contributing to the process.

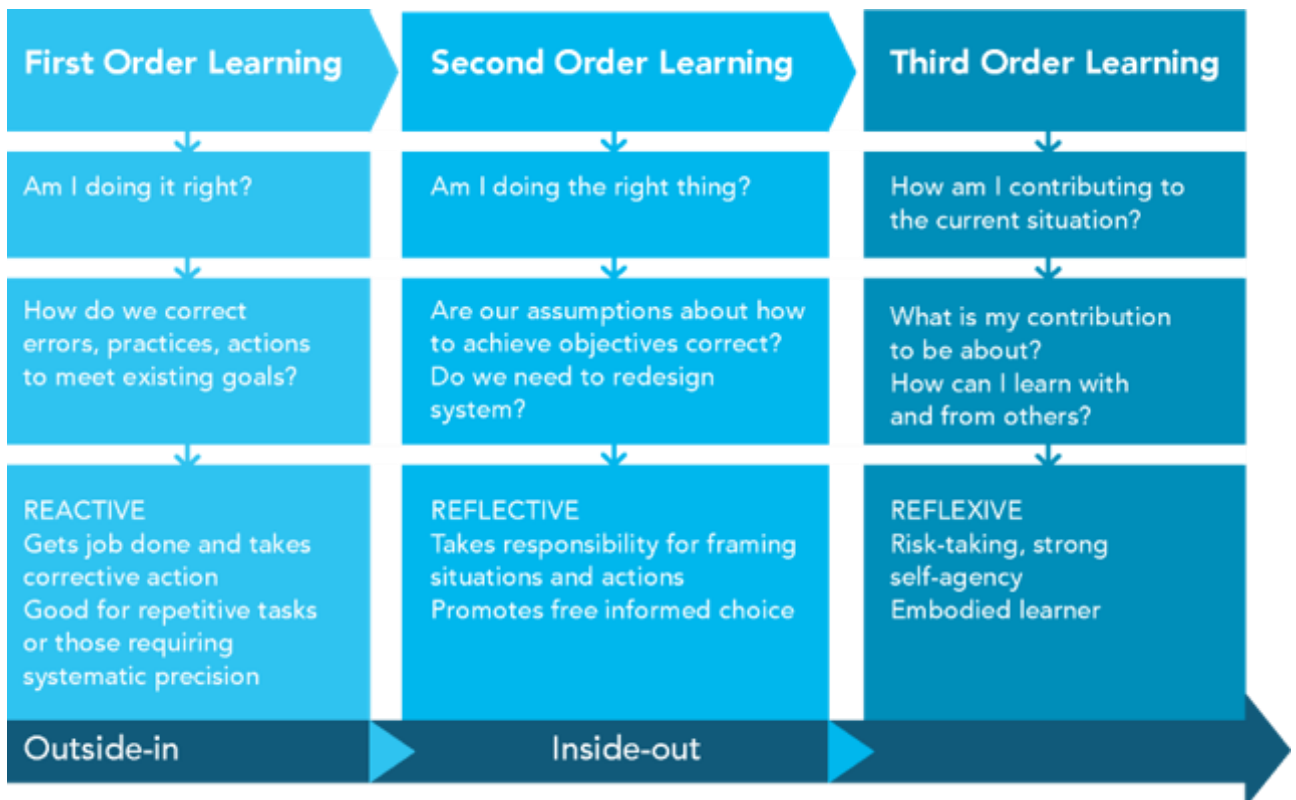


Figure 10: Learning and reflection in systemic practice

First order learning promotes learnings and insights that work within the existing values, rules, roles and cultural norms. It addresses the question 'are you/we doing it right'. This learning is reactive. It gets the job done and takes corrective action. It is good for repetitive tasks or those requiring systematic precision.

Second order learning promotes learnings and insights that challenge existing rules, roles and cultural norms. It addresses the question, 'are you/we doing the right thing?' This learning is reflective. It takes responsibility for framing situations and actions. It promotes free, informed choice.

Third order learning promotes answers that address your individual or collective roles in maintaining those values, norms and social structures, and in doing what is required to change the context in which practice happens. It is essentially learning about learning. It is reflexive learning. It supports risk taking, strong self-agency and deep embodied learning.

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It is important to understand that there is no 'right' level of contextual learning. Sometimes you just have to fix things, sometimes it is appropriate to challenge things, and sometimes you have to dig for deeper understandings. What is important to note is that the learning order to which you are designing your project will impact on the actions that become possible. Fig. 11 describes some learning order actions, for example, a first order plan is associated with participating out of habit, while a second order plan will help in co-designing learning opportunities, and a third order plan will be able to instigate and drive learning opportunities at a deeper level.

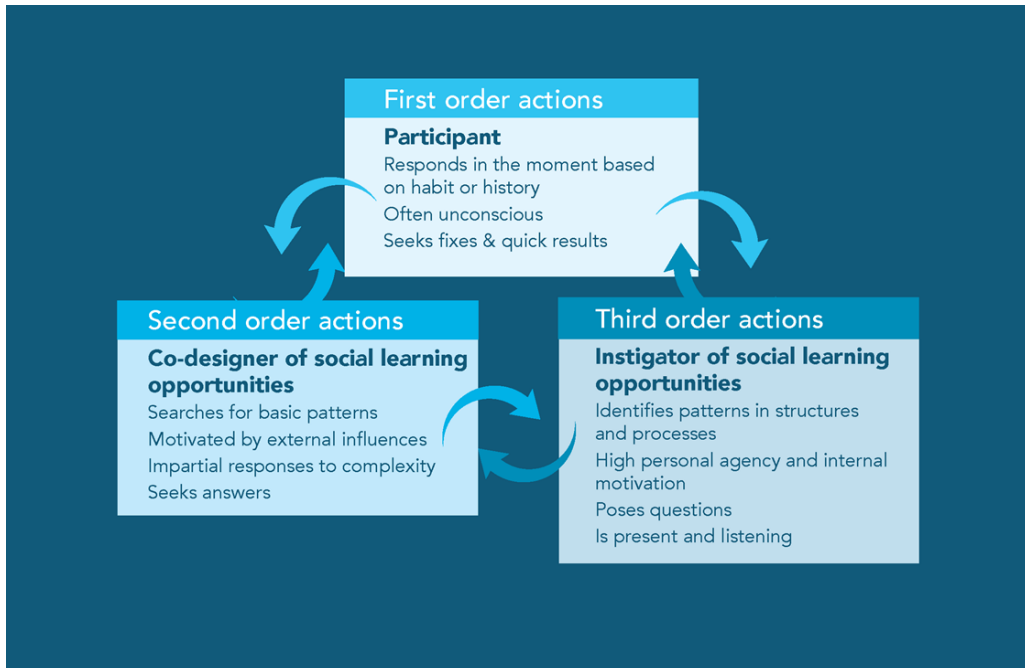


Figure 11: Learning order actions

Identifying patterns

Reflecting on what you sense is going on will help you to identify patterns within the system and ask what your contribution is to either sustaining the status quo or questioning it using a third order approach. Fig. 12 illustrates two kinds of learning patterns. The upper loop reflects first and second order patterns of learning. The lower loop reflects third order patterns of learning.

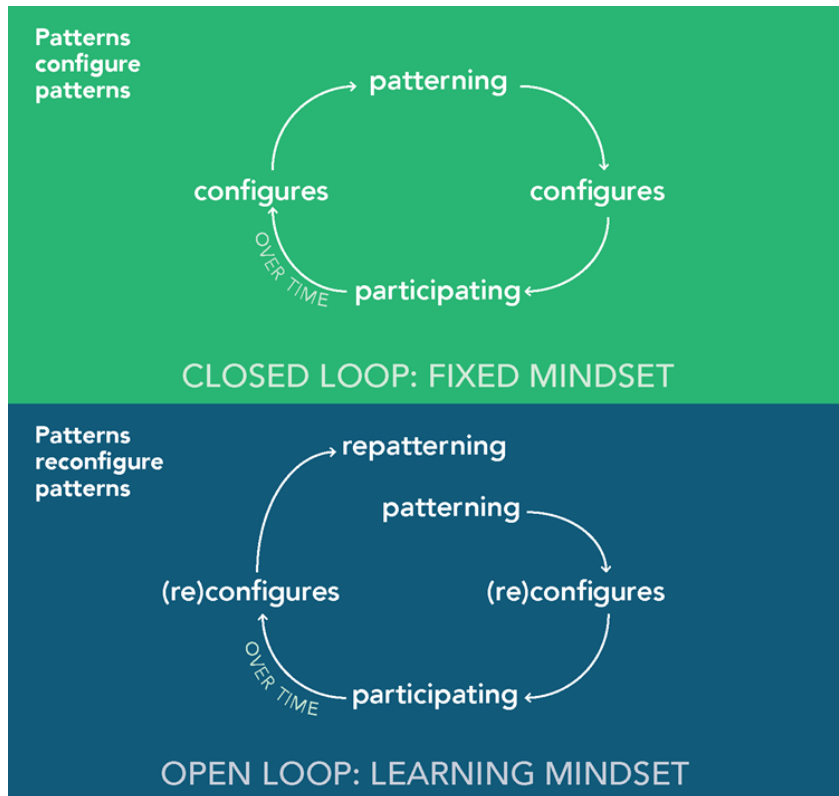


Figure 12: Patterns of patterns

Systemic practice is about moving beyond making sense of quantitative or factual information at a first order level, to sensing the configurations that occur repeatedly within your situation. This perspective can discern networks, cycles of growth and decay, as well as boundary structures. It relies on a learning mindset. Being open and reflective can support you to see patterns and also how you contribute to either reinforcing them or making changes that can lead to the emergence of new patterns and practices over time. As discerning patterns can often happen at a tacit level, or below conscious awareness, it is important to have space for shared reflection that can be led by the facilitator.

Metaphor Analysis

There are several ways to strengthen your pattern detection skills: influence diagrams and rich pictures can help here. As we live in language, paying attention to the metaphors in use around a situation can sometimes help to surface patterns.

Metaphors underpin much of how we think, understand and create meaning: they are very often present in how we speak and describe things. They offer a useful way to track patterns of thinking and expose understandings and behaviours that may help or hinder the potential of your project. On the other hand, they can create “thinking traps”, but they also have the potential to free up our thinking.

For instance, the metaphor of being “at war” or in a “battle” against pandemics or poverty and “the game” of advocacy all provide root metaphors that are indicative of a particular orientation towards a situation. When health is understood as wealth, and the general “wellbeing” of a state is understood in economic terms, then “economic health” becomes a measure of how a state is performing. This suggests that checking reoccurring metaphors, naming them and changing them can help to shift mindsets within the situation.

Questions to ask about metaphors in use

What aspects of the situation do metaphors in use in your situation highlight?

What aspects of the situation do they hide or make difficult to discuss?

How do the metaphors in use influence behaviour in the situation?

What might alternative metaphors familiar to those within your local context offer?

What systems-informed metaphors might help deepen systemic practice?

What unintended consequences might alternative metaphors have?

Pulling it all Together

This Guide has so far described seven essential elements that together contribute to systemic practice. Within each of those seven, the Guide provides a range of methods that can be used in the scoping stage. However, individual elements on their own do not comprise systemic practice. Systemic practice emerges when these individual elements are combined and build on each other.

Until now, the Guide has not presented a specific way of combining the elements. That is because each circumstance is unique, and it is best to assess the specific situation of concern and then design the most appropriate way of combining the methods to meet the needs of the situation.

Therefore, we now describe two overall processes that demonstrate what a systemic process can look like: Snappy Systems and Soft Systems Methodology. They each cover all seven essential elements. As you go through these processes, you can insert ideas and methods contained in this Guide, and they also leave space for you to use your own approaches.



Match and bend the approach to the situation using all your resources



Snappy Systems

Snappy Systems is a useful approach when you don't have a lot of time, but you do have good access to the necessary information and, ideally, the participation of people likely to be affected by your proposed project.

Step	Question	Description
1	What is the situation that you are concerned with right now?	Describe it as "Something to do with ...". Try to describe it in neutral terms (e.g. disease transmission, health service delivery, animal welfare) and not as a problem (e.g., prevention of zoonotic diseases) or as a solution (establishment of coordinated action).
2	Think about what you are ideally trying to achieve within this situation.	Complete the following sentences: We are developing a proposal to With ... That will ultimately benefit ... This is the right thing to do because we believe that ...
3	Think about the reality of achieving a proposal that will work in real life.	Complete the following sentences: Some people will believe that it is not the right thing to do because they believe that ... Some people will believe that it is not the right thing to do because they believe that ... The necessary power and ability to act to achieve a successful proposal is ... The proposal will need to incorporate these cultural and social norms and values: ... The proposal will need to gain the support of the following people for it to be feasible: ...
4	Explore the implications for developing your proposal.	As a consequence of these previous three exercises, you need to: Continue to do ... Start doing ... Stop doing ... Change doing in order to develop a proposal that is both desirable and feasible
5	Reflect on and learn from what is new or different about these implications.	Ask the following questions: How is this the right situation to address in the current context? What do we understand our collective contribution to this situation to be about? What do we need to pay attention to in implementing this project?

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Soft Systems Methodology

Soft Systems Methodology (SSM) is more detailed and extensive than Snappy Systems. It can be completed fairly quickly but is most powerful when spread out over the kind of time period that you will use in your scoping stage.

SSM methodology was developed in the 1970s for exactly the kind of complex, messy situation you have been asked to address. The process is similar in some ways to project planning processes you will be familiar with, but has the distinct systemic features described in this Guide.

Using SSM has several advantages:

It is a problem-structuring approach to managing your way through a complex and ill-defined situation

- It supports you to accommodate different perspectives.
- It offers an approach to working with current reality while at the same time developing an ideal scenario in order to develop an actionable plan.
- It is flexible enough so that you can mix and match some of the other methodologies provided with this workbook to effectively meet the needs of your context and practice.
- It is also an iterative process. The tasks are not necessarily followed in a linear fashion and there is continuous feedback and learning throughout the process of discovery. Nothing is set in stone until the exploration is concluded. This means that, starting wherever you are, you can look back to see if you have already covered the earlier suggested tasks and then move forward to complete the cycle.

SSM Steps

The SSM process proceeds through a series of steps, although it encourages jumping back and forth as ideas emerge and change. The entire process forms a cycle of learning, as illustrated in Fig. 13.

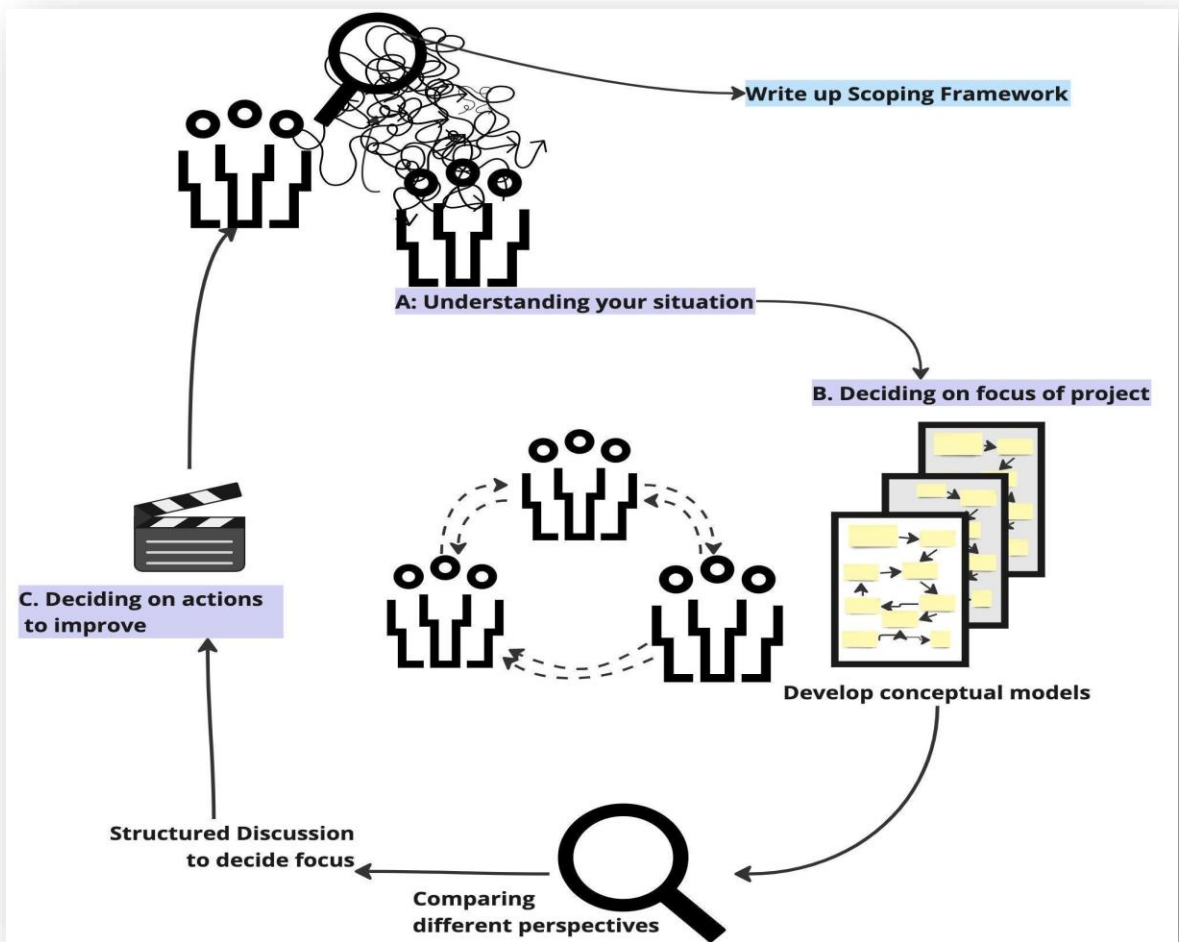


Figure 13: soft systems methodology applied

Step One: Understand your situation

Step Two: Explore different perspectives

Step Three: Decide on your focus

Step Four: Develop your ideal

Step Five: Work out what's feasible and desirable

Step Six: Implement

This cycle is a journey from the real (Steps 1 & 2), to the conceptual (Steps 3 & 4), and back to the real again (Steps 5 & 6). It follows a common project planning process, but the content of that process is specifically systemic and definitely not systematic.

SSM uses or can use many of the exercises contained in this Guide. For instance:

Step 1: [Rich Picturing](#)

Step 2: [Stakeholder roles and motivations](#), [History Lines](#)

Step 3: [Critical Systems Heuristics](#), [CATWOE](#)

Step 4: [Ideation](#), [Scenario Development](#), [Three Horizons](#), [Backcasting](#), [Influence Mapping](#)

Step 5: [Power Cube](#), [Assumption Surfacing](#)

Step 6: [Reflection and Learning](#)

SSM's special features

The specific features of SSM that make it systemic are:

Step One: Understanding the situation

Step One of SSM avoids the 'starting with the problem or solution' trap. Before identifying problems and deciding on solutions, step into the messiness of reality with a completely open mind. Forget any particular solutions that have already been identified. Don't confuse understanding the situation with understanding the problems that might already have been identified, because as soon as something has been decided as a problem, the kind of solutions that are open to you are restricted. This can be easier said than done. For instance, it is easy to start a Rich Picture on the basis that you are going to "create a policy" to solve a problem. But "creating a policy" is already informed by assumptions you have made and it may not reflect reality and draw your attention from more pressing problems. Instead, identify the specific situation of concern may open up more dimensions – and therefore more creative and appropriate solutions.

Step Two: Explore different perspectives.

The situation is then viewed through multiple lenses. Individual systemic appreciation of the situation will always be partial, no matter how rich your picture might be. It is important to engage multiple roles in the situation or they may later become part of the problem and not part of the solution. Identify each lens by completing the sentence, 'this situation is something to do with ...' in different ways.

Step Three: Decide on your focus

Stepping into the conceptual space needs to be carefully structured and tightly focused. Soft Systems uses the mnemonic CATWOE to help you focus. The purpose of CATWOE is not to categorize, but to focus attention on the key areas of the system that you wish to focus on. Other systems might also be relevant, and these can be explored by changing the elements of CATWOE.

Step Four: Develop your ideal

There are several places where the SSM journey can accidentally switch from being systemic to being systematic. Step One has already mentioned the first; allowing the problem to interfere with how the situation is understood. The second is to allow reality to enter too early in the journey, which reduces the opportunities for creative solutions to emerge.

The way that SSM achieves that is to keep the 'picture' of the idea really simple yet fundamental. If the idea is too detailed then it is easy to get tangled up in discussions about what really happens, tempted to add things to the ideal and, in the subsequent stage when you assess viability, you inevitably get lost in all the contradictions and trade-offs. In SSM, the ideal is often illustrated by a diagram that only contains between 5 and 10 elements. These items are decided by what logically flows from the CATWOE, and nothing more is added. If the subtleties and complexities of reality intrude, the model becomes too complicated to gain any insights when you compare the model with reality.

Here is an 'ideal' model from SSM.

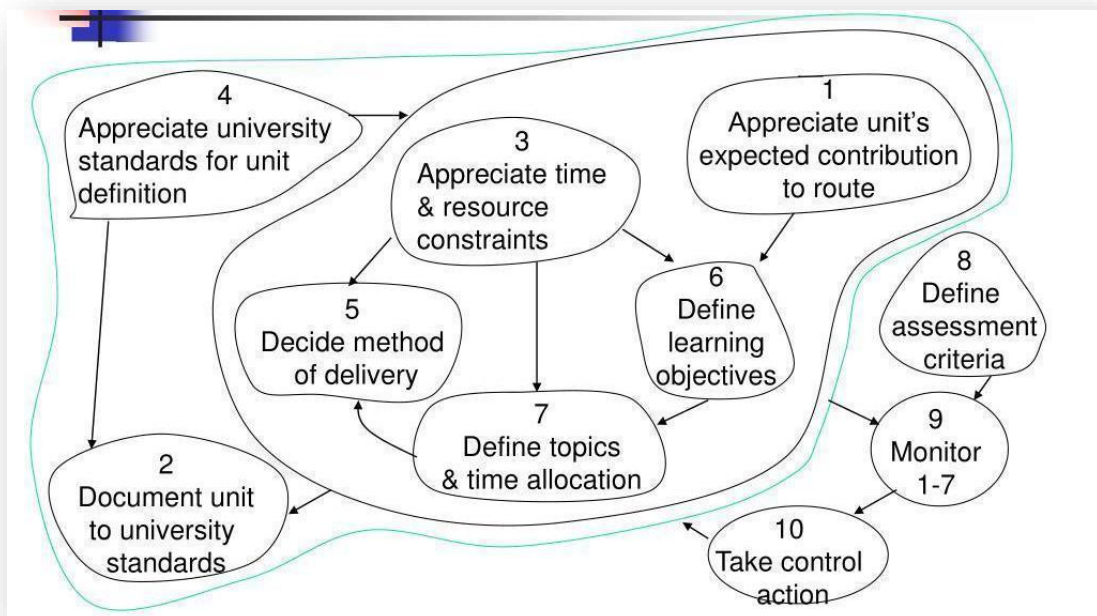


Figure 14: Soft systems model to develop unit standards in a university department

Step Five: Work out what's feasible

At the core, SSM is a learning process. Many systems methods are about learning from difference. In this case, the difference is between the ideal as generated in Step Four and the real-life situation created in Step One. The point of the comparison is to help pose powerful questions of reality that will help to act in the real world to achieve the purpose you are seeking. It is not, however, to find ways of turning reality into your ideal. That is the third and final place where you can switch from being systemic to being systematic. Indeed, it is often a good idea to have different versions of CATWOE that define different ideas that in turn lead to different kinds of questions of reality that finally lead to different insights into how reality can be improved.

These questions are based on three different tests of desirability:

- *Efficacy*: What is the right thing to do?
- *Effectiveness*: Will this do the right thing?
- *Efficiency*: Will this do things the right way?

And three questions about feasibility:

- *Ownership*: Who in reality and in the 'ideal' has the authority and ability to take action? What are the implications of your answer for your project proposal?
- *Culture*: How do the norms, values and roles present themselves in the real world and in the 'ideal'? What are the implications of any differences and similarities for your final proposal or project?
- *Politics*: How is power expressed in the real world, and how does it need to be expressed in the 'ideal'? What are the implications of this for the final proposal or project?

Summing Up

This Guide has introduced the idea of systemic practice and seven essential practices that together contribute to systemic practice. It has also described a range of methods that can be used – alongside the methods you already use – in your systemic practice. As you prepare for the implementation stage, it is useful to reflect on your individual and collective experience of the scoping stage and how you will sustain the momentum and energy that has been built over the course of your project’s implementation stage.

The following questions can provide some reflection on the process you have been through:

Did you see a sense of coherence and integrity emerge during the scoping stage process?

When working together, did you have the right amount of freedom to develop the project proposal in the way that was appropriate to your situation (autonomy) within the rules set by the N4H process (control)?

Were there sufficient differences amongst those developing the proposal to make for a dynamic and creative process?

Are you confident that your boundary decisions about who and what to include and exclude in your proposal are justifiable?

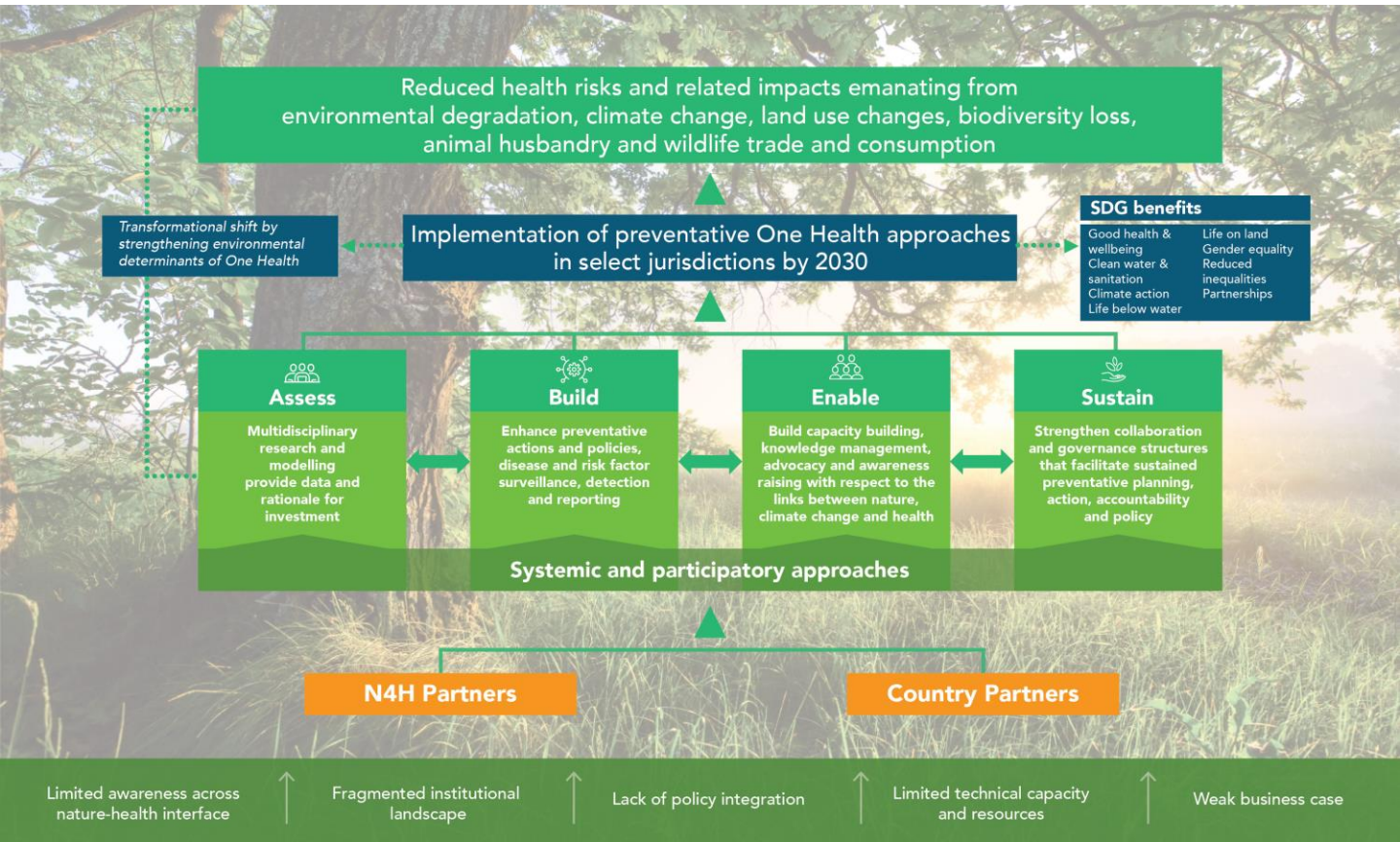
Were contributors really engaged in the proposal development? Do they feel a sense of responsibility for it?

At the end of this scoping stage, you will have a proposal for the next two to three years. If you have utilised the contents of this Guide, then it is likely to be a systemic one.

The time between submitting the Implementation Project Document and getting the go-ahead for the next stage provides an opportunity to reflect.

Annexes

Annex 1: Nature for Health Theory of Change



Annex 2: Nature for Health Potential Stakeholders



Governments

Governments are public bodies with responsibility for providing a stable, regulated environment and public services and play a critical role in driving change and facilitating One Health at scale. Since the COVID-19 pandemic, health promotion and the avoidance of pandemics is at the top of many government agendas. As the global community strives to find appropriate health risk prevention mechanisms, national governments play a vital role in mainstreaming biodiversity preservation into health policies, laws and regulations through a variety of ministries including health, agriculture and environment. Local governments have direct experience in providing public services and finding solutions to biodiversity, energy, waste, water, sanitation, land use, and health issues.

Non-Governmental Organizations

Non-governmental organizations (NGOs), play an important role in holding governments to account, ensuring proper representation and upholding the rights of people and the environment. NGOs include a huge variety of organization type, size and capacity focused on human health, animal health and/or the environment operating both locally, nationally and internationally. NGOs often act as guardians of the environment with technical knowledge and strong advocacy skills, with the ability and legitimacy to organize, mobilize and implement. The strength of NGOs is highly country-specific and can be highly relevant for preventative One Health.

Indigenous Peoples and Local Communities

Comprising less than 5% of the world's population, Indigenous Peoples and Local Communities (IPLCs) protect 80% of the global biodiversity. As custodians of nature and holders of traditional knowledge, indigenous peoples' identity, culture, languages, heritage and livelihoods are naturally rooted in whole-system approaches and could bring effective solutions for preventative One Health.

There is a unique opportunity to place IPLCs at the heart of N4H and ensure that their traditional knowledge and expertise is truly heard and integrated into preventative One Health solutions.

Educational, Scientific and Technological Communities

Educational, Scientific and Technological Communities play an important role in preventative One Health solutions providing a convening role, undertaking whole-system approaches and research, ensuring academic rigor, undertaking monitoring and evaluation and helping to draw out learning and experience. May have open data collection and sharing approaches and will be important in both identifying gaps but also for implementation and education. Educational communities will be engaged in order to better embed biodiversity and climate aspects in the definition and practice of healthy lifestyles.

Private Sector

Business (e.g. industrial, finance, agriculture) and the corporate philanthropic sector play a role in advancing technological (e.g. laboratories, devices, etc.) and risk management (e.g. insurance) solutions, as well as with respect to resource mobilization for sustainable long-term financing of biodiversity conservation and climate change mitigation and adaptation. Their contribution, support and further engagement in pandemics prevention through the enhanced integration of biodiversity and climate considerations in One Health approaches will be important as N4H evolves.

Women and Girls Groups

Girls and women both substantially affect and are affected by preventative One Health approaches. Women typically represent half of the workforce in agriculture in developing countries. Women play a labor-intensive role in livestock management and are often responsible for selling wild animals in markets. Women and girls are usually the first to experience the impacts of a spillover as biodiversity loss compels them to travel greater distances for wood, water, plants and animals for food necessities. This frontline role disproportionately exposes them to the risk of zoonotic diseases. Women and girls' groups will be consulted to raise awareness and apply the dual lens of gender empowerment and biodiversity linkages within the One Health approach.

Children and Youth

Children and youth are active players in the protection and management of the environment, natural resources, as well as in the promotion of human and animals' health and well-being, economic and social development. Their engagement is important so that their concerns and priorities are integrated as the project evolves.