Practical guides for collaborative and complexity-aware practice

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Effective indicators for place-based initiatives

Developing and using indicators in collaborative, multi-actor settings

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Effective indicators for place-based initiatives
A practical guide for developing and using indicators in collaborative, multi-actor settings

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This guide is part of the wider Learning for Sustainability body of work, which brings together resources and reflections on systems thinking, evaluation, collaboration and working in complex, place-based settings. It draws on material developed and curated through the website and organises key ideas into a practical format for real-world use.

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Contents

Summary

This guide provides a practical approach to developing and using indicators in place-based initiatives and policy processes, particularly those involving multiple organisations, communities and knowledge systems.

Indicators are widely used across environmental, community development and policy settings. However, they are often difficult to apply effectively in practice. They can become overly technical, disconnected from decision-making, or reduced to reporting requirements that add little value. The challenge is often not a lack of indicators, but a lack of connection between what is measured and what people need to know in order to act.

This guide takes a different starting point. Rather than focusing primarily on indicator definitions or technical selection criteria, it looks at how indicators are developed and used in practice, and how their value emerges through interpretation, dialogue and ongoing use. In complex, place-based settings, indicators are best understood not simply as measures, but as part of a broader process of sense-making and adaptive management.

In practice, the guide is most useful in three situations: supporting teams starting a new initiative who need to agree on what to monitor and why; helping those reviewing existing indicators to assess whether they remain meaningful and connected to decisions; and assisting practitioners working with indicators derived from larger monitoring systems who need to interpret and adapt them for a particular place.

At the centre of the guide is a six-step process, presented as an iterative cycle rather than a linear method:

1. Clarify purpose, scope and scale
2. Involve the right people
3. Develop a shared understanding of the system
4. Identify possible indicators
5. Select a small set of useful indicators
6. Use indicators to support monitoring, evaluation and adaptive management

A central idea is that the process of developing indicators is often as important as the indicators themselves. Conversations about what matters, how the system works, and what constitutes progress help build shared understanding and support coordinated action.

The guide also explores how conceptual frameworks and rubrics work alongside indicators to support structured judgement, how different knowledge systems shape what is measured and how it is interpreted, and how place-based indicator work connects to an increasingly data-rich monitoring landscape. It includes practical tools — indicator profiles and monitoring action plans — designed to support real-world use.

The aim is to support practitioners in developing indicator approaches that are useful in practice and defensible when questioned.

How to use this guide

If you're working on indicators in a collaborative, place-based setting, this guide is designed to meet you where you are. It can be read in full, but many readers will find it more useful to move through it selectively, starting with whatever is most relevant to their situation.

The guide is structured in three parts. Part 1 sets the scene, explaining why indicator work is harder than it looks and introducing frameworks that connect indicators to system understanding and programme design. Part 2 sets out a six-step process for developing and using indicators collaboratively. Part 3 addresses rubrics, working across knowledge systems, real-world constraints, the changing monitoring landscape, and practical tools.

If you are designing a new initiative, you may find it helpful to start with:

- Sections 2–4 to build a shared understanding of context, purpose, and system dynamics
- Section 5 (the six-step process) as your main guide
- Section 6 (rubrics) to clarify what "good" looks like
- Section 11 (tools and templates) for practical support

If you are reviewing or refining existing indicators, you may find it useful to focus on:

- Section 3 (what indicators do and do not do)
- Section 5, particularly Steps 3–5 (outcomes, indicator selection, and profiles)
- Section 8 (working with real-world constraints)
- Section 11 (tools and templates)

If you are working with indicators from national or external systems, the following sections may be particularly relevant:

- Section 2 (purposes and tensions)
- Section 5, especially Steps 2, 4 and 6 (system understanding, identifying indicators, and use)
- Section 9 (indicators in a changing monitoring landscape)

In practice teams often move back and forth between steps rather than following them in a strict sequence.

This guide and the Learning for Sustainability website

This guide has been written as a practical companion to the Learning for Sustainability website (learningforsustainability.net), a practitioner-led knowledge hub now in its 20th year. The site brings together annotated links to open-access resources from diverse sectors and regions, alongside reflections, frameworks and papers grounded in systems thinking, evaluation, collaboration and complexity-aware practice.

Rather than carrying an extensive reference list, this guide draws on that wider body of curated material. A small number of links to related pages are included where they may offer useful further detail, examples or facilitation approaches.

PART 1
Setting the scene

1. Introduction

This guide is for people working in place-based initiatives and policy processes. It is intended for those who need to develop and use indicators as part of collaborative work. It is aimed at practitioners, programme managers, policy staff, evaluators, community coordinators, and applied researchers. These roles often sit within settings such as catchment management, environmental restoration, climate adaptation, community development, and regional planning, where multiple organisations, communities, and knowledge systems need to come together around shared goals.

In this context, "place-based" refers not only to a defined geographic area, such as a catchment or region, but also to the institutional and governance settings within which decisions are made and action is taken. While the focus is on these settings, the approach is also relevant to those working with broader frameworks, such as ecosystem services, natural capital, or national monitoring and reporting systems, where indicators need to be interpreted and applied in specific contexts.

Indicators are widely recognised as important but are often difficult to use well in practice. In many programme and policy settings, they become disconnected from decision-making, overly technical, or reduced to reporting requirements that add little real value. The challenge is often not a lack of indicators, but a lack of connection between what is measured and what people need to know to make informed decisions.

This guide takes a different starting point. Rather than focusing primarily on indicator definitions or technical selection criteria, it looks at how indicators connect to programme and policy design, system understanding, and day-to-day decision-making. Its focus is on indicators that are used and are useful, not just indicators that exist.

> **The value of indicators lies in how they are used in practice, not simply in how they are designed.**

The approach brings together systems thinking, co-design, and monitoring, evaluation and learning into a practical process for developing and using indicators in complex settings. It is grounded in experience working across a range of place-based initiatives where conditions are changing, outcomes are uncertain, and different perspectives need to be brought together.

The guide is more detailed than a short overview, but less technical than a methods manual. It focuses on the practical work of developing indicator approaches that people can actually use in complex, real-world settings.

A central idea is that the process of developing indicators is often as important as the indicators themselves. Conversations about what matters, how the system works, and what constitutes progress help build shared understanding and create a basis for coordinated action.

Indicators in these settings are rarely neutral or self-explanatory. They are shaped by underlying assumptions about how change occurs, and their meaning emerges through interpretation and shared discussion.

The guide also explores how indicators relate to conceptual frameworks and rubrics, how different knowledge systems shape what is measured and how it is interpreted, and how place- based indicator work connects to an increasingly data-rich monitoring landscape. It includes practical tools, such as indicator profiles and monitoring action plans, designed to support real-world use.

This guide sits within a wider collection of resources on the Learning for Sustainability website (learningforsustainability.net), where related material on indicators, monitoring and evaluation, conceptual frameworks, and collaborative approaches is maintained. The guide is intended to be self-contained, but readers looking for additional depth, examples, or tools will find companion material there.

2. Indicators in context

Indicators are widely recognised as important, but are often surprisingly difficult to get right in practice. Done well, they help diverse groups develop a shared picture of what is happening and track whether things are moving in the right direction. They support informed decisions across catchment, urban and community development contexts. Done poorly, they become a compliance exercise, a distraction from the real work, or a source of false confidence.

This section sets out the landscape that indicator work sits within. It covers the purposes indicators serve, the kinds of systems they operate in, and the conditions that shape whether they are useful.

Why indicators are harder than they look

Indicators are used for different purposes, and these purposes shape how they are selected, interpreted, and applied. In some contexts, indicators are used primarily for accountability and reporting, where consistency and comparability matter. In still others, they track performance against agreed plans or targets. In others, they support understanding, reflection, and learning where outcomes are uncertain and cause and effect are difficult to untangle.

These purposes are not always compatible. An indicator designed for national reporting may not help a local team understand what is changing in their catchment. An indicator that supports reflective learning may not satisfy a funder's reporting requirements. In practice, indicator sets often need to serve multiple purposes at once. Being explicit about which purpose an indicator is primarily serving helps teams make better choices and clarify where compromises have been made. A wider range of indicator approaches and frameworks is outlined on the Learning for Sustainability indicators and metrics page, which provides additional context and examples.

> **Indicators are designed, not discovered. How useful they are depends on how well they are tied to purpose and context.**

Indicators are also linked to different parts of a programme or system, and their meaning depends on where they sit. In programme contexts, indicators may relate to inputs, activities, outputs, outcomes, or longer-term impacts, reflecting assumptions about how change is expected to occur. In system-based frameworks, such as those used in environmental reporting, indicators may relate to drivers, pressures, state, impacts, and responses, connecting human activities to environmental change and policy responses.

These different positions matter. Indicators linked to activities and outputs are typically used for performance and accountability. Those linked to outcomes and impacts help track change over time. Those linked to system responses often inform strategic decisions. Being clear about where an indicator sits helps ensure it is fit for purpose and interpreted appropriately.

In practice, indicator development involves a good deal of judgement, interpretation, and collaboration. Structured judgement, supported by explicit criteria and shared reasoning, is different from informal opinion, and helps make the interpretation of indicators more transparent.

This becomes particularly clear in place-based work where the starting point is often not a set of predefined measures, but a process of exploring what matters. In catchment management, climate adaptation, and community development settings alike, indicator development often begins with questions about what people value, who holds knowledge about those values, and what forms of evidence are available. Indicators are then developed through a combination of local knowledge, available data, and ongoing dialogue.

Proxy indicators are often necessary in place-based settings where direct measurement is not feasible. Their value lies in their practical usefulness rather than their precision. The relationship between a proxy and what it represents should, however, be kept under review, as changes in context can weaken that connection.

A key part of this work is relational. Networks of organisations and individuals often need to be understood alongside the indicators themselves, providing pathways to interpret, validate, and update information over time. This is as true in urban resilience and adaptation planning as it is in environmental management.

Economic, environmental, social, and cultural indicators each capture different aspects of value, using different forms of evidence and different ways of knowing. While they can be brought into conversation with each other, they cannot always be reduced to a single metric. Narrative accounts, local knowledge, and qualitative observations are often as important as quantitative data in making sense of change.

Even data-driven indicators, such as those built from spatial units like meshblocks, reflect the structure of the data as much as the underlying values. Indicators do not exist ready-made; we construct them. Their usefulness depends on how well they are tied to purpose, context and decision-making.

These tensions will not disappear. The practical task is to make them visible and work with them in honest ways.

Complicated and complex systems

A complicated system, like building a dam or engineering a bridge, is largely predictable. You can design the parts, put them together, and the outcome is assured if the engineering is right. Indicators of progress in such systems are directly linked through cause and effect.

Most place-based initiatives, however, involve complex adaptive systems, interconnected elements – people, organisations, ecosystems – that respond to each other and adapt over time. Ecosystems, communities, and catchment management systems are all examples. These systems do not respond predictably to intervention. The components co-evolve through their relationships with each other.

This distinction has practical implications for indicator work. In complex systems, indicators are better understood as providing a focus around which people come together to discuss what is happening and consider adjusting their approaches. They support learning and sense-making, not just measurement.

In these settings, it is often more realistic to focus on contribution rather than attribution. Indicators help build a plausible account of how different activities and actors are contributing to observed changes, rather than providing definitive proof of cause and effect.

In work on integrated catchment management, for example, developing a shared understanding of how land use, nutrient flows, and water quality interact has often revealed that different groups hold different assumptions about what is driving change. These differences need to be surfaced before meaningful indicators can be agreed.

When working in a complex system, it is often better to test a range of smaller interventions and learn from the results than to follow a fixed plan and measure compliance against it. Indicators help us do this, but only if they are connected to the conversations and decisions where learning happens.

Indicators as part of programme and policy design

In practice, indicator development is rarely a standalone technical task. It is typically part of a broader process of designing and refining programmes and policies.

In many place-based programmes, developing a monitoring approach is inseparable from the wider work of bringing together indigenous communities, farming interests, community groups, government agencies, and scientists around a shared commitment to the health of a degraded system.

The approaches outlined in this guide are grounded in co-design. Indicators, monitoring approaches, and aspects of programme and policy design are developed together through dialogue and shared exploration, rather than being defined in advance.

The six-step process that follows in Section 5 can be understood as a co-design cycle for developing indicators and monitoring systems in place-based initiatives and policy settings.

This means that the emphasis is not only on selecting the right indicators, but on building the shared understanding and working relationships through which indicators become meaningful. The process of developing indicators together, and the conversations about what matters, how the system works, and what constitutes progress, are often as valuable as the indicators that result.

3. What indicators do, and what they don't

Indicators quantify and simplify phenomena. They help us understand and make sense of complex realities by telling us something about changes in a system. We are all familiar with financial indicators that track the state of an economy, or health indicators like blood pressure and temperature that give us a quick read on how someone is doing. Environmental and social indicators work in a similar way. They abstract and present key features of a complex picture to support decision-making.

Indicators are powerful tools, but they are also partial. They highlight some aspects of a system while leaving others in the background. Understanding both what indicators show and what they leave out is important for using them well.

It is therefore worth being clear about what indicators can and cannot do. An indicator is not the thing itself. It is a pointer, an approximation. Many indicators are not direct measures of the thing we care about, but proxy measures that provide a useful signal of how a system is performing.

For example, the number of kayak hire companies operating in a coastal area can serve as a proxy for the popularity of that area for recreational use, even though it does not tell us how many people are on the water. In climate adaptation, the proportion of local plans that reference climate projections can serve as a proxy for institutional readiness, even though it says nothing about implementation.

In community development, participation rates in local planning processes are sometimes used as a proxy for social engagement, recognising that attendance does not capture the quality of that engagement. These indirect measures are often the only workable option in place-based settings, and their value lies in their practical usefulness rather than their precision. The relationship between a proxy and what it represents should, however, be kept under review, as changes in context can weaken that connection.

> **An indicator is not the thing itself. It is a pointer, an approximation.**

A useful guiding principle is that indicators need to be good enough to be useful, not perfect. Waiting for the ideal indicator, or the complete dataset, often means waiting too long. Starting with what is available and improving over time is nearly always more productive. "Good enough" does not mean uncritical. It means being transparent about limitations, clear about assumptions, and open to refinement.

Because indicators simplify reality, they carry risks. They can create a false sense of precision, give undue weight to what is easy to measure, or shift attention away from important things that are harder to see. They can also shape behaviour in unintended ways, as people respond to what is measured rather than what matters most. Recognising these limitations does not diminish their value, but it emphasises the need to interpret them carefully and use them as part of a wider process of judgement and dialogue.

In practice, the most useful indicators act as prompts for conversation rather than definitive answers. A change in an indicator is rarely self-explanatory; it raises questions about what is happening, why, and what should be done in response. Different people may interpret the same indicator differently, depending on their experience and perspective. This is not a weakness, but part of how indicators support learning in complex settings. Their value lies in helping people come together to explore what the information might mean, test assumptions, and consider responses.

> **Indicators are most useful as prompts for conversation, not as definitive answers.**

Indicators serve several distinct purposes. They can support understanding and research, accounting and certification, status assessment, and performance tracking. But their greatest strength is arguably in communication. In place-based settings, where multiple organisations and communities need to work together, indicators provide a shared language for talking about what is happening and what matters.

Good governance of natural resources depends on good information – but that information needs to arrive in time, in a form people can understand, and linked to the decisions they actually face. Indicators contribute to this, but only when they are connected to the conversations, relationships, and decisions through which information is interpreted and acted on.

4. Frameworks for understanding systems and programmes

Indicators can only tell you something useful if you first have a shared picture of what they are pointing at. Before selecting indicators, it helps to develop a shared understanding of how the system you are working with works. This includes what drives change, how different components relate to each other, and where interventions are expected to have effect. Without this, indicator selection can become a technical exercise disconnected from what matters.

In some situations, indicators are already defined through external requirements, such as reporting systems, regulatory frameworks, ecosystem services models, or cost–benefit analyses. In these cases, the task is not to design indicators from first principles, but to understand how they relate to the system and how they can be used in context. Conceptual frameworks help make these connections explicit, linking indicator values to underlying processes, assumptions, and decision contexts. This is particularly important where indicators are used as inputs into valuation or decision-support tools, where their meaning can otherwise be taken at face value.

> **Indicators can only tell you something useful if you first have a shared picture of what they are pointing at.**

This is where conceptual frameworks come in. The aim is not a perfect or comprehensive model, but one good enough to guide indicator selection and interpretation, that reflects the understanding of the people involved.

While many different frameworks are used in practice, the distinction between programme-based and system-based perspectives is widely useful. One focuses on how actions are expected to lead to change, the other on how the wider system behaves. This applies whether working with programme design, policy development, or system-level frameworks such as ecosystem services.

Programme-based frameworks: understanding what we are doing

Programme-based frameworks help structure what we are doing and what we expect to happen as a result. Three related models are particularly useful. Each offers a slightly different lens, and in practice they are often used together.

Logic models (also known as outcomes models or intervention logic models) are narrative or graphical depictions of the underlying assumptions through which an activity is expected to lead to a specific result. They describe logical linkages among programme resources (inputs), activities, outputs, and outcomes (see Figure 1). Making these assumptions explicit helps ensure that indicators are interpreted appropriately, particularly where cause and effect are uncertain or contested.

The main components are straightforward. Inputs are the resources invested: money, staff, equipment. Activities are the interventions undertaken. Outputs are the tangible products, such as reports, workshops or field days, along with the people or groups reached through participation. Outcomes are the changes that occur or emerge over time. These may be described as intermediate and longer-term outcomes, with impact referring to the wider or longer-term changes to which the work contributes. Intermediate outcomes are especially useful when ultimate outcomes are slow to materialise, as is common in natural resource management.

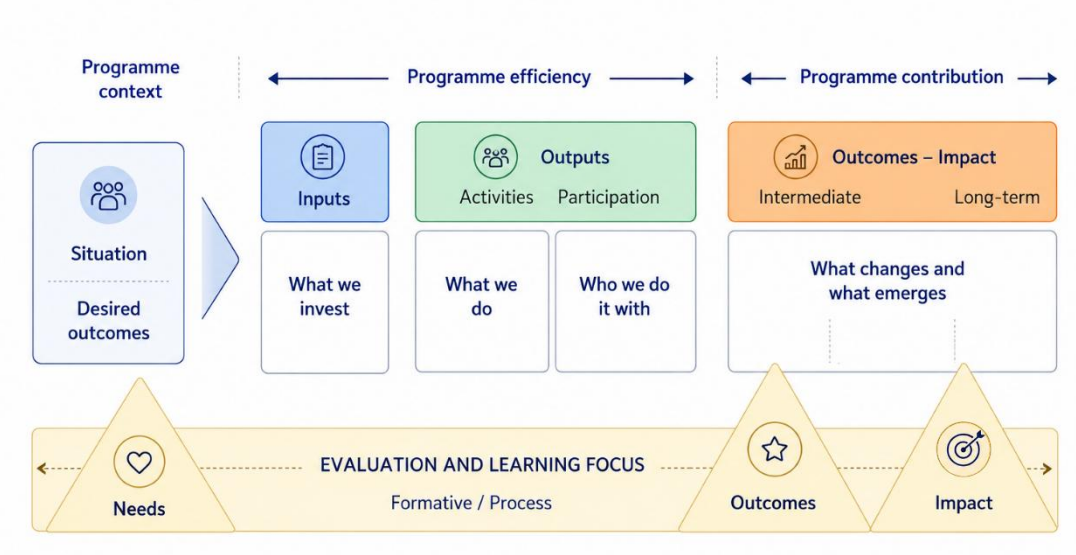

Figure 1. A programme logic model showing how different evaluation and learning approaches can be used to explore implementation, outcomes and longer-term change. (Diagram source and attribution: Linking planning with monitoring and evaluation.)

The **orders of outcomes** model takes a different cut. It helps place-based programmes to distinguish enabling changes (policy, funding, governance), behavioural changes (how people and organisations work), and longer-term environmental and social changes. That sequence is a useful reminder that practice and relationships often move before biophysical outcomes. The model helps plan activities in sequence so they build on each other and provides a realistic picture of the time horizons involved.

The policy cycle focuses on timing rather than type of change. It treats programmes as moving through repeated phases of planning, implementation and review, and assumes that management is a learning process, adjusted as people gain experience over time.

This has direct implications for indicators. Early on, when people are trying to understand the situation and plan a response, descriptive indicators of environmental conditions and emerging impacts are most useful. They help build baselines and a shared picture of what is happening. As responses are developed and put in place, performance indicators become more important, tracking changes in activities and practices, including shifts in behaviour among key actors. Later, in outcome assessment phases, state and impact indicators come back to the foreground. Indicator sets should evolve as an initiative matures, with a stronger early emphasis on understanding gradually giving way to a greater focus on outcomes.

System-based frameworks: understanding the system we are working within

System-based frameworks help us understand the wider system and the relationships between human activities and environmental conditions. The most widely used is the DPSIR framework – Driving forces, Pressures, State, Impacts, Responses.

Driving forces are the underlying social and economic needs that shape human activity. Pressures are the stresses that these activities place on the environment. State describes the current condition of the system. Impacts are the effects of environmental change on human wellbeing, ecosystem services and biodiversity. Responses are the actions taken by groups and governments to prevent, compensate for, or adapt to environmental change.

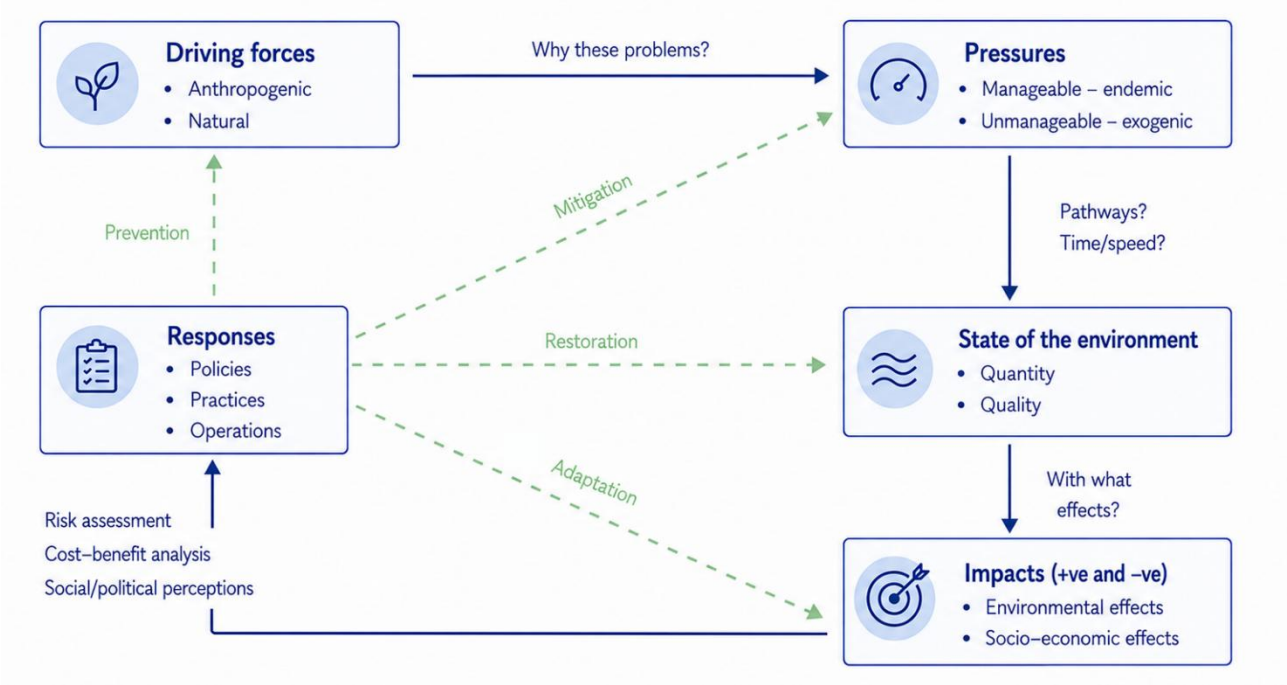

Figure 2. The DPSIR framework, a widely used way of linking drivers, pressures, state, impacts and responses in environmental assessment and reporting. (Redrawn for this guide from common DPSIR framings.)

The DPSIR framework helps break down complex environmental challenges by linking human activities, environmental change, and policy responses. Its strength lies in its simplicity and its capacity to structure information across the full chain from human activities to impacts and responses.

In many settings, indicators are also derived from quantitative models, such as nutrient load estimates or habitat condition scores. In these cases, indicator values depend on underlying model assumptions and input data quality, and these need to be understood and communicated alongside the indicators themselves. Although often presented as a linear chain, the framework in practice resembles a complex web of interacting factors, some highly non-linear.

How frameworks work together in practice

As noted earlier, these are not the only ways of organising indicator work. In some contexts, frameworks based on capital (natural, social, or human), wellbeing dimensions, resilience, ecosystem services, or Indigenous knowledge systems may be more appropriate. Further examples of these frameworks, including theory of change, DPSIR, and other systems-based approaches, are available on the Learning for Sustainability website.

The important thing is less which framework you choose and more whether it helps people build a shared picture of the system and what counts as meaningful change. In practice, different frameworks are often used together, each providing a particular lens on the system.

A useful distinction for practitioners is that some frameworks help us think about what we are doing, while others help us think about the system we are working within. A good indicator set will typically include measures that track both programme performance and system condition, even where different frameworks organise them.

> **Different frameworks offer different ways of seeing a system; their value lies in how they are used together.**

In practice, jointly developing these frameworks with the people involved helps clarify system boundaries, formulate questions, and reveal the assumptions of different groups. Because of genuine uncertainty over how ecological and socio-economic systems interact, reaching agreement on a single model is unlikely, and often undesirable.

As data accumulate around chosen indicators, the information can be used to refine and distinguish between these different models. This refinement through monitoring and reflection lies at the heart of adaptive management.

Alongside these conceptual frameworks, rubrics can play a complementary role. While conceptual models help identify key components and relationships, rubrics help define which aspects are most important, and what meaningful progress looks like.

Indicators are then selected or developed to provide evidence in relation to those aspects, rather than being treated as standalone measures. Rather than sitting at the end of the process, rubrics are part of the overall architecture that shapes how indicators are defined, interpreted, and used. Section 6 explores rubrics in more detail.

With a shared understanding of the system in place, the next step is to translate that understanding into a practical set of indicators to support monitoring, evaluation and decision-making.

PART 2
Developing and working with indicators

5. A process for developing and using indicators

Selecting appropriate and useful indicators requires careful thought about purpose, scale, and use. It also requires collaboration, shared understanding and iterative refinement. Despite the range of monitoring and evaluation approaches in use, there is a surprising degree of convergence around a common set of steps.

These are presented in sequence, but in practice they are often undertaken in parallel or revisited as understanding develops. They apply both when developing indicators from scratch and when working with existing indicators that need to be adapted for a particular context. The steps are:

- Clarify purpose, scope and scale
- Involve the right people
- Develop a shared understanding of the system
- Identify possible indicators
- Select a small set of useful indicators
- Use indicators to support monitoring, evaluation and adaptive management

In practice, indicators are rarely used in isolation. They are developed and used as part of a small, coherent set that together provides a balanced and useful picture of what is happening. These sets often combine different types of evidence, including quantitative data, qualitative insights, and locally held knowledge.

Two components underpin effective indicator systems. The first is the process itself, with its accompanying steps. The second is a conceptual framework providing a shared representation of the drivers, states and outcomes under consideration. These frameworks help make explicit the assumptions linking actions to change, and provide a basis for interpreting results in context. Section 4 explores the main types of frameworks used.

These steps can be applied to develop a full set of indicators for a new initiative, or in part, when teams are looking to modify or refine individual indicators for an existing programme. Related guidance on facilitation guides and frameworks, systemic design and monitoring, evaluation and learning can be found on the Learning for Sustainability website.

At a glance: a process for developing and using indicators

Effective indicator work in place-based settings is built around six interrelated steps. These are presented as a cycle rather than a fixed sequence, recognising that most initiatives work in complex, changing systems.

1. Clarify purpose, scope and scale
   - What are we trying to understand, manage or change?
   - At what scale, and for whom?
   - What does success look like?
   - Do we need to align with wider reporting or monitoring frameworks?

2. Involve the right people
   - Who needs to be involved, and whose knowledge and decisions matter?
   - What perspectives are needed, including scientific, local and Indigenous knowledge?
   - How will the process remain inclusive over time?

3. Develop a shared understanding of the system
   - How does the system work, and what drives change?
   - Which programme-based and system-based frameworks will we use?
   - Where are we expecting our actions to have an effect, and over what timeframes?

4. Identify possible indicators
   - What could we measure or track to understand these components and relationships?
   - What existing data, indicators or proxies can we draw on, and how well do they represent what we are trying to understand?

5. Select a small set of useful indicators
   - Which indicators are most meaningful and practical?
   - Do they help inform real decisions?
   - Is the set balanced and manageable, covering both system condition and programme performance?

6. Use indicators to support monitoring, evaluation and adaptive management
   - How will indicators be used in practice?
   - Where and how will results be discussed, interpreted, and used to support decisions?

These steps are rarely followed in a straight line. As new insights emerge, earlier steps are revisited, assumptions are tested, and indicators are refined.

Using the process in your context

The six steps outlined in this section can be used in different ways depending on your situation. In practice, most teams move back and forth between them as understanding develops, rather than following them as a strict sequence.

Starting a new initiative. If you are developing indicators for a new place-based programme, the six steps can provide a scaffold for workshops or discussions with partners. Working through them in order can help you clarify purpose, scope and scale, involve the right people, build a shared understanding of the system, and agree on a set of useful indicators. The tools and templates at the end of the guide can support these conversations.

Reviewing or refining existing indicators. If you already have indicators in place, you may use the process more selectively. You might revisit what the indicators are intended to do (Sections 1 and 2) and then focus on clarifying purpose (5.1), selecting indicators (5.5), and how they are used in practice (5.6). This can help assess whether your current indicators remain meaningful, relevant and connected to decisions, and whether any should be retired or added.

Working with large datasets and standardised indicators. In some contexts, indicators are already defined through national monitoring systems, ecosystem services models or other data-driven frameworks. Here, the task is less about designing new indicators and more about interpreting and adapting existing ones. This includes understanding how indicators have been constructed, what assumptions underpin them, and how they relate to the specific place and decisions being considered. The process can help assess whether these indicators are appropriate for your context, identify gaps and connect them more directly to decision-making.

Using the process with others. The process is intended for collaborative use. Many of the steps benefit from discussion between people who hold different forms of knowledge and responsibility, including local communities, Indigenous communities and knowledge holders, technical specialists, programme managers and policy staff.

These approaches apply across a wide range of settings, including environmental management, policy processes, and community development.

5.1 Clarify purpose, scope and scale

Many indicator processes jump straight to selection, identifying and choosing measures, without first understanding what the indicators need to report on. The first step is to be clear about the problem or opportunity you are working with, the outcomes you are seeking, and the scale at which you are operating. This includes being clear about where indicators sit within a programme or system, and what role they are intended to play.

Key starting questions include: What are we trying to understand, manage or change? At what scale? For whom? What does success look like? Vague or overly broad objectives, such as ‘improving water quality’ or ‘strengthening community wellbeing’, are of limited use and may indicate that the initiative is not yet sufficiently defined.

Evaluations of management and policy effectiveness vary widely in scope. At one level is a farm, a neighbourhood, or a small catchment initiative. At larger scales, evaluations may focus on river basins, regions, or national policies. Indicators from smaller scales may need to be aggregated when working at larger scales, which introduces challenges.

In many situations, indicators are expected to serve multiple purposes and scales at once. An indicator that is meaningful and actionable at the local level may lose its nuance when aggregated upward. Conversely, higher-level reporting requirements can distort what is measured locally, pulling attention away from what matters most in a particular place. Being explicit about which scale an indicator is designed to serve, and where compromises have been made, helps manage these tensions.

It is also important to recognise that many of the values and conditions we care about in place-based work are emergent and context-dependent. People may not express strong views about a place or resource until it comes under threat.

It is also worth considering whether locally developed indicators will need to align with external reporting frameworks or connect to wider monitoring systems. Where such alignment is expected, it can inform the design of the indicator set from the outset, rather than being retrofitted later.

5.2 Involve the right people

Developing indicators is a social process, not just a technical one. Policy success depends on the cooperation of different groups, and more inclusive and collaborative approaches are now well established in fields such as water management, conservation and urban planning.

The process of developing an indicator set provides a valuable opportunity to involve a range of partners in discussions about goals, plans and assessment. This draws on different perspectives and areas of expertise, helps ensure that attention is focused on the changes that matter, and builds shared understanding of how indicators relate to outcomes on the ground. It can also strengthen monitoring and evaluation capability.

Who is involved shapes what gets measured. Different participants bring different forms of knowledge, including formal science, local experience, and Indigenous knowledge systems. How people are engaged will influence which values are identified, how they are expressed, and what is tracked. This is a reality to be worked with, not a limitation to be managed away.

Information in place-based settings is often fragmented across groups. Different agencies, community organisations, landowners and researchers may each hold pieces of the picture, and bridging these can be challenging, particularly across cultural or disciplinary boundaries.

It is also important to recognise that collaborative processes are not neutral. They can, intentionally or not, privilege more powerful interests or marginalise others. Indicators reflect choices about what matters, whose knowledge counts, and what evidence is accepted. Attention to process quality is therefore critical. This includes investing in facilitation, relationship-building and, where needed, conflict management.

In some cases, additional participants will be identified as the work progresses. What matters is that the process remains open, transparent and adaptable over time. Broad involvement helps build shared ownership and a sense of collective achievement in working together.

5.3 Develop a shared understanding of the system

Before selecting indicators, it helps to develop a shared picture of how the system you are working with works. This includes what drives change, how different components relate to each other, and where interventions are expected to have effect. Section 4 sets out the main types of conceptual framework that can support this, including programme-based and system-based models. This step focuses on the process of developing and using those frameworks collaboratively.

The aim is not a perfect or comprehensive model, but one good enough to guide indicator selection and interpretation, and that reflects the understanding of the people involved. Jointly developing conceptual models helps participants clarify system boundaries. It also makes explicit the assumptions held by different groups.

In many place-based settings, developing a shared understanding of the system reveals that different groups hold quite different assumptions about what is driving change. These differences need to be surfaced before meaningful indicators can be agreed.

Pictures, diagrams and simple models can help develop a shared language across groups. The models do not need to be technically sophisticated. What matters is that they are developed with the people whose knowledge and decisions matter, and that they are treated as working tools to be refined over time, rather than as fixed descriptions.

In some contexts, elements of these models may already exist, such as those used in environmental reporting or ecosystem services assessments. Even then, there is value in working through the model collaboratively to understand its structure, assumptions, and implications for local decision-making. Where related or nested models are needed, sub-groups can develop these, either with partners and other actors, or as a starting point for wider discussion.

These differences often sit beneath later disagreements about indicators and what they show. Making them visible early, and working with them openly, helps ensure that indicator selection is grounded in a shared, or at least understood, view of how change is expected to occur.

5.4 Identify possible indicators

There are usually many possible indicators for any particular purpose, but some are more appropriate and useful than others. Start by creating a wider initial list of possible indicators. These should cover each component and interaction identified in your conceptual models.

Brainstorming sessions with colleagues or other actors can draw upon a wide range of expertise. Consider related monitoring programmes to see whether their information can be used directly. Many organisations maintain databases and indicator lists for different components of environmental and social systems. State of environment reporting systems, council monitoring programmes, and research databases are all potential sources. Consulting people with specific expertise, or reviewing related programmes in similar sectors, can also yield useful ideas.

At this stage, it is worth thinking creatively about proxies. In many situations, you cannot directly measure what you care about, so you work with indirect indicators. The number of properties in a flood-prone area with raised floor levels can serve as a proxy for household-level adaptation uptake. Community group membership can serve as a proxy for social connectedness in a neighbourhood

undergoing change, even if membership numbers do not perfectly reflect the quality of those connections. In coastal settings, the number of recreational hire businesses can indicate how an area is being used. The question to ask is: does this indicator tell us something meaningful about the condition or trend we need to understand?

Where related models are needed, sub-groups can develop candidate indicator sets for specific areas, either with others involved or as a starting point for wider discussion.

This stage can generate a large number of indicators. Not all will be useful in practice. Even at this early point, it helps to keep in mind how indicators might be used, and by whom, so that the focus remains on those likely to support meaningful interpretation and decision-making.

5.5 Select a small set of useful indicators

From the wider list, the task is to develop a small set of indicators that will form the core of your monitoring and evaluation system. A small set of well-chosen indicators will usually prove more effective than an extensive list. The goal is to identify what has been termed the 'vital few' measures that together provide a useful picture of what is happening.

The aim is not to identify the 'best' individual indicators, but to develop a set that works well together. A small number of complementary indicators, covering different aspects of the system and the programme, is usually more useful than a larger collection of disconnected measures.

There is no fixed rule on numbers. Somewhere between 10 and 20 indicators is often a useful range for a programme or partnership, though smaller initiatives may work effectively with fewer. What matters is that the set is balanced, manageable, and meets the needs of those involved.

Selection criteria

A number of criteria help ensure the relevance and quality of the indicators selected. The following table summarises the key characteristics to look for.

Table 1: Indicator selection criteria

Criterion	What to look for
Validity	Does the indicator adequately reflect progress towards the outcome being sought?
Sensitivity	Is it likely to be sensitive to real changes in the state of the system?
Simplicity	Can it be presented in a way that is meaningful to the range of audiences involved?
Utility	Will it be useful for decision-making, not just reporting?
Timeliness	Will the information be available at the right time to inform decisions?
Data availability	Are source data readily available, or likely to become available?
Comparability	Can the indicator be reasonably compared with similar indicators in other areas or sectors?
Robustness	Is it defensible to a technical audience? Are the results verifiable?
Repeatability	Can the data be obtained regularly to track a trend?
Threshold or target	Is there a target level or bottom line against which to assess the indicator?

Practical considerations

Qualitative and quantitative. Both quantitative and qualitative indicators have a role. In practice, many of the most significant aspects of place-based work do not lend themselves easily to quantification. Combining qualitative and quantitative indicators is often more honest and useful than forcing everything into numbers.

Categorisation, not just ranking. It is tempting to assume that every indicator needs to be scored or ranked. In some cases, however, it is more useful to distinguish types, identify patterns, or highlight presence and absence rather than rank performance. For example, grouping sites by their characteristics or the activities they support may be more informative than ranking them on a single scale.

Describing what progress looks like. Once indicators have been selected, it is useful to ask how we know whether things are going well. Numerical targets or thresholds work for some indicators, but many of the things that matter in place-based work do not lend themselves to simple numerical targets.

Rubrics offer a structured way of describing what different levels of progress look like. They are particularly useful for indicators that relate to the quality of processes, relationships or governance. This is further explored in Section 6.

Time lag and attribution. High-level outcomes in place-based work often take years to materialise, while reporting is typically required over shorter periods. This can be addressed by identifying intermediate outcomes that act as stepping stones. For example, if the long-term outcome is restored ecosystem health, an intermediate outcome might be reduced fertiliser use or the extent of riparian planting.

Attribution is also challenging. Because many factors influence outcomes it is often not possible to demonstrate direct cause and effect. Instead, the task is to build a credible performance story that shows how activities and outputs are contributing to observed changes, supported by intermediate indicators and a clear logic linking actions to outcomes.

Direction and thresholds. Indicators should be designed so that the direction of change has a consistent meaning. Thresholds, boundary levels at which significant changes occur, are particularly important in environmental management, where systems can shift abruptly from one state to another.

Visualisation and presentation. How indicators are presented matters. Spider diagrams, for example, allow multiple indicators to be displayed together, but care is needed to ensure that individual indicators are interpreted rather than focusing only on the overall shape. The key is to match the form of presentation to the information and the audience.

Cost. Indicators must be practical. The cost of data collection needs to be considered, and trade-offs are often required between the information value of an indicator and the effort needed to produce it.

Finally, it is important to record the rationale for indicator selection decisions. There are rarely perfect indicators, and future users will need to understand why each indicator was chosen and what trade-offs were made.

5.6 Use indicators to support monitoring, evaluation and adaptive management

Indicators only have value if they feed into ongoing decision-making and learning. Selecting good indicators is necessary but not sufficient; they need to be embedded in a monitoring and evaluation system that is itself part of the wider management process.

A well-designed monitoring and evaluation system should support improvement and adaptation at several levels. At the project management level, it should provide the information needed to improve performance. At a strategic level, it should support regular review of the system itself, including what it is showing, whether indicators remain fit for purpose, and whether courses of action need to be reconsidered.

> **The real test of an indicator is not whether it is collected, but whether it changes a conversation or a decision.**

The adaptive management cycle is straightforward in concept. It involves setting clear goals, developing conceptual models, selecting indicators, implementing actions, collecting and interpreting data, and adjusting course. In practice, this depends on several elements working well.

Connecting indicators to decisions. For each indicator, it is useful to ask what decision might this inform, and who will act on it? Without this connection, indicators can drift into passive monitoring. In some programmes, applying this question has led teams to reduce their indicator sets significantly, because several indicators, while technically sound, were not connected to any decision that anyone involved was in a position to make.

Monitoring frequency. Monitoring frequency needs to reflect how quickly change is likely to occur. Process indicators often require more frequent tracking. Outcome indicators may change more slowly and may need to be complemented by proxy indicators that provide earlier signals of likely change.

Coordination across agencies and partners. Most place-based settings require collaboration across organisations. Developing a monitoring system often involves linking the data collection efforts of different groups, each holding part of the picture. Bringing these together in a coherent way can be challenging, particularly where systems, priorities or ways of working differ.

Communication. Communicating results to different audiences is an often overlooked aspect of monitoring and evaluation. Information needs to be presented in ways that are relevant and meaningful, highlighting what is changing and why it matters. This is most effective when considered from the outset, rather than added later.

Review and refinement. After some rounds of data collection, it is useful to review both the monitoring approach and the indicators themselves. Are they telling us what we need to know? Are there gaps? Have circumstances changed in ways that require new indicators or the retirement of old ones? Letting go of indicators that are no longer useful is as important as introducing new ones. Without this, indicator sets can grow over time, becoming harder to manage.

In complex settings, indicators rarely provide definitive answers on their own. Their value lies in how they are interpreted, discussed, and used to support collective judgement. Over time, they help build a credible picture of how actions are contributing to change, even where direct attribution is not possible.

The most important outcomes of collaborative monitoring are not simply data, but relationships and shared understanding that enable people to use information to support decisions. In many cases, making sense of indicator results requires structured approaches to judgement that help clarify what progress looks like in practice.

PART 3
Working with indicators in practice

6. Using rubrics and structured judgement

Indicators rarely speak for themselves. They need to be interpreted in relation to what matters in a particular context, and to what constitutes meaningful progress. This is where structured approaches to judgement become important.

Rubrics are one widely used way of supporting this. More broadly, similar tools are used in multi-criteria assessment tables, evaluation frameworks, and other structured formats that help people bring together different types of information and make considered judgements.

These approaches are particularly useful in complex, place-based settings, where progress cannot be captured by a single measure and where different perspectives need to be brought together. They help make values explicit, support discussion, and provide a shared basis for assessing change.

> **Structured judgement is what connects indicators to meaning.**

As outlined in Section 4, rubrics sit alongside conceptual frameworks as part of the architecture of indicator work. While conceptual models help identify key components and relationships within a system, rubrics help define what matters and what meaningful progress looks like. Indicators then provide evidence in relation to both.

What rubrics are

A rubric has two core components. A list of criteria, which define what counts in a particular task or area of performance, and descriptions of quality at different levels, which show what good, developing, and poor performance look like. This structure makes expectations explicit and shared, rather than leaving them implicit.

Developing rubrics collaboratively, with the people whose work will be assessed against them, is part of their value. The process of agreeing on criteria and describing what different levels look like helps build shared understanding of what is expected, what counts as meaningful progress, and where attention is needed.

Different types of rubrics

Analytic rubrics break down multiple criteria and define levels for each, supporting detailed and transparent assessment. They are useful where systematic comparison and accountability are priorities but can be time-consuming to develop collaboratively and may feel rigid in settings where the work is evolving.

Holistic rubrics group criteria together and provide an overall description at each level. They are well suited to quick, summative judgements but may not offer the specificity needed for formative feedback or reflective learning.

Generic rubrics use broad, standardised criteria that can be applied across multiple settings. They are flexible but can feel too general when detailed feedback or contextual nuance is needed.

All three types are widely used across fields such as education, programme evaluation and performance assessment, particularly where benchmarking or standardisation are priorities. A companion post on the Learning for Sustainability site, Using rubrics to plan and assess complex tasks and behaviours, offers more information.

Single-point rubrics: a tool for reflection and dialogue

In complex, multi-actor settings, where goals and contexts are rarely fixed and outcomes emerge over time, conventional rubric formats can feel limiting. They often assume predefined criteria, linear progress, and relatively stable conditions. A fourth type, the single-point rubric, offers an alternative particularly suited to these settings.

> **Rubrics help make values visible and discussable, rather than leaving them implicit.**

A single-point rubric describes a reference point for each criterion as a description of what 'good enough' looks like. Rather than mapping out multiple fixed levels of performance, it prompts reflection and dialogue. Participants can explore where their situation sits in relation to that reference point, what strengths are evident, and where development is needed. A more detailed discussion of single-point rubrics, including examples, is available on the Learning for Sustainability website.

This approach has several practical advantages for indicator work. Single-point rubrics are easier to co-create with diverse groups. They can evolve as the work develops, without requiring the entire rubric to be redesigned. And they support the kind of structured conversation that helps teams stay close to what matters, even as conditions shift.

Other structured approaches

Alongside rubrics, a range of related approaches are used in practice. Multi-criteria assessment tables organise information across a set of agreed criteria and support structured comparison or prioritisation. Rating scales and scorecards provide simplified ways of summarising performance across different dimensions.

While these approaches vary in form, they share a common purpose. They help people bring together different types of information, make their reasoning explicit, and reach considered judgements where no single measure is sufficient.

The choice of approach matters less than whether it helps people explain their reasoning and agree on what progress looks like in their context. In some settings a simple rubric will be enough; in others a more detailed multi-criteria framework may be needed. What matters is that the tool fits the context and is developed with the people who will use it, so that the reasoning behind assessments is clear and shared.

How rubrics and indicators work together

Rubrics work best as a companion to indicators, helping define what matters and how progress is assessed, rather than simply interpreting results after the fact. Where an indicator tells you what to track, a rubric helps you and your partners describe and discuss what you are seeing. Used together, they support evidence-based reflection grounded in shared criteria rather than individual opinion.

> **In complex settings, rubrics work best as a companion to indicators, not a replacement for them.**

This is particularly important for indicators that relate to process quality, institutional capacity, or the strength of relationships and partnerships, areas where change is real but difficult to quantify. Rubrics provide a way to make progress in these areas visible and discussable, without reducing it to a single number.

Involving partners and other actors in developing rubrics and agreeing on the criteria and levels of performance increases the likelihood that assessments will be meaningful and acted upon. Co-developed rubrics are more likely to reflect what people see as achievable.

It is worth noting that the term ‘rubric’ does not always resonate, particularly outside education or evaluation. In natural resource management, policy, or science contexts, phrases such as ‘multi-criteria assessment framework’ or ‘progress descriptions’ may be more familiar. In practice, how these judgements are framed and applied is shaped by the different knowledge systems and perspectives involved.

7. Working with multiple knowledge systems

In many place-based initiatives, the development of indicators involves engaging with a range of knowledge systems and perspectives. Scientific and policy-based approaches are often important, but they are not the only ways of understanding a system or assessing change. Indigenous knowledge, local experience, cultural perspectives, and, in some contexts, spiritual or faith-based understandings can all shape what people see as important and how they interpret what is happening.

This has implications not only for the choice of indicators, but for how programmes and systems are understood. Different groups may hold different views about what matters, what good looks like, and how change should be recognised. If these perspectives are not considered, indicator sets can fail to reflect the realities of those most closely connected to the place.

This guide is written from a practitioner perspective grounded in collaborative, place-based work. It aims to support respectful engagement across knowledge systems, but does not attempt to interpret or represent Indigenous-led approaches, which exist in their own right and within their own frameworks.

In practice, working across knowledge systems often involves shifts in how programmes and evaluations are designed and used. In many partnership settings, which are likely to involve agencies, Indigenous communities, land users and community groups, evaluation processes have been developed collaboratively with partners rather than applied from outside. This might involve jointly designing the evaluation questions, agreeing on what forms of evidence are appropriate, or using shared workshops rather than external reports as the primary space for assessing progress. In these settings, evaluation becomes part of the relationship, not something done to it.

> **Different knowledge systems do not just add perspectives; they shape what is seen and what counts as evidence.**

It is also worth recognising that the relationship between different knowledge systems is not symmetrical. Scientific and policy-based frameworks typically carry more institutional weight, shaping what counts as credible evidence and how resources are allocated. Local and Indigenous knowledge systems often operate with less formal authority, even where they offer deeper or longer-standing understanding of a place. Being aware of these dynamics, and designing processes that do not inadvertently reinforce them, is part of what respectful engagement involves.

Indicators and other forms of evidence are then interpreted collectively, alongside narrative insights, local knowledge, and cultural perspectives. This approach recognises that different groups bring different understandings of what matters, and that meaningful assessment emerges through dialogue rather than from a single predefined set of measures. Evaluation outputs are treated not as final judgements, but as inputs to ongoing conversations about what is happening and what should be done next.

These challenges also show up in how knowledge is translated into indicators. Different types of knowledge produce fundamentally different forms of evidence. These can include quantitative datasets alongside qualitative descriptions, expert judgement, and experiential maps drawn from local knowledge. Often what counts as a "value" was not predefined but developed iteratively through engagement with different groups. Many values are difficult to measure directly, and some were emergent, only becoming visible when a place or resource came under pressure.

This highlights that working across knowledge systems is not only a relational challenge but also a technical one. The forms of evidence available shape what can be represented, and no single framework can capture all the ways in which people understand and connect to a place.

> **Respectful engagement means designing processes that don't reinforce the asymmetries already present.**

Working with multiple knowledge systems therefore involves more than consultation or the addition of perspectives. It requires creating space for dialogue, recognising different ways of knowing, and being open to adapting both the programme and its indicators. In some cases, this may mean working with qualitative or narrative forms of evidence alongside quantitative measures. In others, it may involve reframing what is being assessed, or how progress is described. This is not always straightforward. It takes time, and it may challenge established ways of working.

Conceptual frameworks and rubrics provide useful structures for working across different knowledge systems. Frameworks help surface different understandings of the system, while rubrics help clarify what matters and how progress is judged. Together, they support more transparent and inclusive reasoning without requiring agreement on a single way of knowing. Working in this way also brings practical challenges, which are part of the day-to-day reality of indicator work in complex settings.

8. Working with real-world constraints

The process described above is relatively tidy. The reality of indicator work in place-based settings is considerably less so. This section addresses common challenges practitioners face and offers reflections on working with them.

Imperfect data is the norm, not the exception. In most place-based settings, comprehensive quantitative data is either unavailable or patchy. Social values in particular are difficult to observe and measure. Many are emergent, arising in response to events or threats rather than existing in a fixed, measurable form.

The aim is not comprehensive measurement, but useful information that supports better decisions. Working with proxy indicators, expert judgement, qualitative descriptions, and mapped knowledge is legitimate. In many cases it is the only practical option. What matters is being honest about the limitations of the data and transparent about the assumptions behind your indicators.

> In practice, indicators are often imperfect, indirect, and based on partial information. Their value lies less in precision, and more in supporting shared understanding and informed action.

Baseline information. In many monitoring and evaluation approaches, establishing a baseline is seen as an important starting point for assessing change. In practice, however, baselines are often incomplete, contested, or only partially available, particularly in complex, place-based settings.

In these situations, baseline information is often developed progressively, alongside indicator selection and system understanding. Where indicators are introduced partway through a programme, baseline conditions may need to be reconstructed using available data, local knowledge, or retrospective assessment. In effect, baselines are often constructed over time rather than established at a single point.

Being transparent about how baseline information has been established is often more important than achieving a precise starting point. In practice, the baseline often serves as a reference for interpretation and discussion, rather than a fixed benchmark.

Numbers without context. A common tendency is to default to a small number of easily available, usually quantitative indicators. While these can be useful, they are often selected without a clear link to the system or the decisions they are intended to inform. This can lead to numbers for their own sake, where data is collected and reported but does not contribute meaningfully to learning or action. Without this context, indicators can give an impression of progress or performance that is difficult to interpret or act on. Indicators are most useful when they are part of a coherent framework that makes clear what they represent, how they relate to each other, and why they matter.

Iteration, not perfection. Indicator development is not a one-off task. It is an ongoing process that improves as understanding deepens, data accumulates, and circumstances change. Starting with what is available and improving over time is nearly always more productive than waiting. There will always be trade-offs between the ideal and the achievable.

Competing perspectives. Different groups will often disagree about which indicators matter, how they should be measured, and what they mean. As discussed in Section 7, people disagree over indicators when they are, in fact, disagreeing over how they define the system or what they value within it. Rather than trying to resolve these differences prematurely, the process can be used to surface and explore them. Making different perspectives visible is itself a form of progress.

The process matters as much as the product. In complex, multi-actor settings, the conversations that take place during indicator development, about what matters, how the system works, are often as valuable as the indicators that result. They build shared understanding, surface assumptions, and create the relationships needed for coordinated action.

> The aim is not perfect information, but information that is useful for action.

Capacity and resourcing. Indicator systems require time, skills, and ongoing attention. Data collection, interpretation, and facilitation of discussions are often added on to already full workloads. Where capacity is limited, indicator systems need to be designed with this in mind, focusing on a small number of indicators that can realistically be maintained and used. Building capability over time, rather than assuming it exists from the outset, is often an important part of the work.

Maintaining key networks. The value of indicators depends in part on the relationships and networks through which information flows. A relatively small number of people often play important gatekeeper and bridging roles within networks, and maintaining contact with them is important for keeping indicator systems current and connected to changing conditions on the ground.

Continuity and turnover. Over time, people move on and roles change. Indicator systems that rely on a small number of individuals or informal understandings can lose coherence when this happens. Documenting assumptions, maintaining shared records, and revisiting the purpose and structure of indicators periodically can help sustain continuity as teams and contexts evolve.

Timing and decision cycles. Indicators are most useful when they align with decision-making processes. Data that arrives too late, or at the wrong frequency, can have little practical value. Designing indicator systems with decision cycles in mind, rather than data availability alone, helps ensure that information is used when it is needed.

Avoiding the compliance trap. There is a real risk that indicator systems become a compliance exercise, something done because it is required rather than because it is useful. When this happens, indicators lose their connection to decision-making and become a burden rather than a resource. Keeping indicators connected to the questions that matter, and the people who need to act, is the best safeguard.

Simpler tools are often better. In many programmes, detailed monitoring plans or indicator sheets are developed but not used. Simpler tools that are embedded in ongoing discussions and decision-making are often more effective. The practical tools in Section 11 are designed with this in mind.

Institutional realities. Indicators do not exist in a vacuum. They sit inside institutional systems that shape what is possible, including reporting requirements, funding cycles, incentives and professional norms. These influence what gets measured, how often, and by whom.

In many projects, the indicators that would be most useful for learning are not the same as those required for accountability. Acknowledging this tension openly, rather than pretending it does not exist, helps teams make more honest choices about what their indicator system is for. These challenges will remain. The practical task is to be open about them and design indicator systems that people can realistically maintain and use.

9. Indicators in a changing monitoring landscape

The collaborative, iterative approach set out in this guide reflects how indicator work has been practised in place-based settings for many years. At the same time, the wider landscape of monitoring and indicator development is changing.

Monitoring systems have become more automated and data-rich. Remote sensing, continuous sensors, DNA methods, citizen science and increasingly AI-assisted analysis and automated classification now feed national datasets built around agreed variables. These can offer better spatial and temporal coverage and support more consistent reporting at larger scales.

A growing share of indicators are now generated by these systems rather than designed from scratch by local teams. That infrastructure can produce standardised outputs at scale, but it does not remove the need for people to make sense of what they are seeing. Seeing change is not enough on its own. Better decisions depend on how people interpret and respond to what they see.

As monitoring systems become more data-rich, the burden of interpretation often increases. More data does not automatically make decisions easier; without a clear framework and shared understanding it can be harder to identify what really matters for a particular place.

> **Detection of change is necessary, but it does not by itself lead to better decisions. That depends on interpretation, dialogue, and the willingness to act.**

For practitioners, this shift has a mixed impact. National systems can save time on data collection, but the indicators they produce are not always aligned with local questions or decisions. They may not reflect local values or priorities, may not be available at a useful spatial or temporal resolution, and rarely come with the shared understanding that makes indicators useful in practice.

In practice, large-scale systems and place-based work are complementary. The former provide consistency, coverage and policy-level reporting; the latter provide meaning, relevance and connection to decision-making. There is often value in linking the two, so that locally developed indicators can draw on broader datasets, and place-based priorities can in turn influence what larger systems measure.

As monitoring systems become more sophisticated, the practical skills described in this guide become more important, not less. Clarifying purpose, involving the right people, building shared understanding, selecting indicators that are good enough to be useful, and connecting indicators to decisions remain central.

10. Conclusion

Indicators are most effective when they are developed collaboratively, grounded in a shared understanding of the system, and connected to the decisions that need to be made. They work best when embedded in a wider process of monitoring, evaluation and adaptive management, and when used to support learning and adaptation rather than simply reporting.

At the heart of this is a set of conversations. The first steps involve bringing people together to explore how a problem or opportunity should be understood, what matters in that context, and how progress might be recognised. From there, conceptual models and frameworks help structure thinking about both the system and the actions being taken within it. Rubrics and related tools help define what meaningful progress looks like. Indicators then provide evidence in relation to these shared understandings.

Used in this way, conceptual models, rubrics and indicators work together to support shared understanding, structured judgement and informed action. Their value lies not only in the information they generate, but in the process through which it is developed, interpreted and used.

> **Indicators are not neutral technical measures; they are shaped by who is involved, what knowledge is used, and how judgement is made.**

This guide has also tried to be honest about the conditions in which indicator work takes place. Data are often incomplete. Perspectives differ. Institutional requirements pull in different directions. Capacity is limited. People move on. The wider monitoring landscape is shifting in ways that create both opportunities and challenges. None of these can be fully resolved, but they can be worked with openly and adaptively.

Working across different knowledge systems, recognising different ways of knowing, and creating space for dialogue about what matters are not optional extras. They are central to developing indicator approaches that are useful and credible. In most settings, the real test is whether these conversations continue once the initial work is done.

For practitioners, programme managers, policy staff, and others working in place-based settings, the practical challenge remains. It is how to develop and use indicators that are good enough to be useful, connected to the decisions that matter, and embedded in processes that support ongoing learning. This guide is intended to support that work, not by providing a fixed method, but by offering a practical framework that can be adapted and revisited as understanding develops.

Working collaboratively to develop and use indicators helps build shared understanding and creates a basis for coordinated action. It also supports the relationships and practices needed for ongoing learning and adaptation. In complex, multi-actor, place-based settings, this may be one of the most important contributions that indicator work can make.

11. Practical tools and templates

Monitoring systems rarely emerge from filling in templates. They usually develop through discussion, as teams clarify what matters, what information is available, and how it can be used. The tools described capture and organise the results of those conversations, not substitute for them.

Two tools are particularly useful. An indicator profile provides clarity at the level of each individual indicator, and a monitoring action plan organises how monitoring feeds into ongoing learning and decision-making. Both are intended to be light.

A monitoring programme should be seen as both a process and a product. These tools support that dual function. They help organise the practical work of data collection and reporting, and provide a structure for ongoing reflection, adaptation and strategic learning. In many programmes, most of the data needed is already being collected. The main workload is often integration and sense-making, not new data collection.

Tool 1: Indicator profile

An indicator profile provides a concise record of what each indicator is, why it matters, how it will be used, and what its limitations are. It helps ensure that indicators are not just listed – but understood.

Unlike standard performance indicator reference sheets, which tend to be technical and compliance-oriented, this version is designed to support reflective use. It connects each indicator to the wider architecture of the initiative. This includes the outcome area it sits within, the rubric or aspect of performance it relates to, and the assumptions it rests on. Developing profiles is best done through conversation. A useful starting point is to work through the following questions for each indicator. These are prompts rather than requirements, and can be adapted to suit the context:

- What outcome area does this sit within?
- What aspect of that outcome does it help us understand?
- Why does this indicator matter? What question does it help answer?
- How will we measure it, and where will the data come from?
- What does change in this indicator mean? What direction is an improvement?
- What are we assuming for this indicator to be meaningful?
- What does it not capture?

Table 2 provides a simple way of recording the answers. Not every field needs to be completed in full at the outset. Even a partial profile, developed through discussion, is more useful than a technically complete sheet that no one has worked through together.

Table 2: Indicator profile

Indicator name	
Outcome area	
What it relates to	Rubric criterion, aspect of performance, or component of the conceptual model
Purpose	What question does it answer? What decision might it inform?
How it will be measured	Method, and whether this is a direct measure or a proxy
Data source	Existing monitoring system, or locally generated? Who collects?
Frequency	
Interpretation	What does change mean? Threshold or reference point?
Assumptions	What are we relying on?
Limitations	What does it not capture?

Profiles should be revisited as understanding develops, particularly after early rounds of data collection reveal what is working and what is not.

Tool 2: Monitoring action plan

A monitoring action plan organises how monitoring and evaluation actually happen over time. It addresses the practical questions that sit between having a set of indicators and using them.

Monitoring action plans are most useful when structured around outcome areas or themes, rather than a single consolidated list. Each outcome area will typically have its own set of indicators, and organising the plan in this way helps teams see how monitoring connects to what they are trying to achieve.

The plan itself usually emerges through discussion, rather than by filling in a table. A useful starting point is to work through the following questions for each outcome area:

- What are we trying to achieve here?
- How would we know if things are improving?
- What information do we already have?
- What do we need to add, if anything?
- Where will we actually talk about this, and when?

Table 3 outlines a useful way of recording the agreements that emerge from these conversations.

Table 3: Monitoring and decision table

What matters	What we look at	How we use it
The outcome area or aspect of performance	The indicator(s) or evidence drawn on	Where and how the information feeds into reflection and decisions
Riparian condition	% of stream margins with native planting > 5m (aerial imagery + ground-truthing)	Reviewed at annual catchment workshop; feeds into restoration priorities
Engagement across actors	Single-point rubric assessment (facilitated group discussion)	Discussed at six-monthly partner meeting; informs engagement planning
Water quality trends	Nutrient concentrations at monitoring sites (regional council data)	Quarterly data summary; interpreted at annual review; informs management priorities

For teams that need more operational detail, a fuller version can include additional columns for frequency, responsibility, and the specific forum or process where information is discussed. But the three-column version often captures what matters most. It brings together what we care about, what evidence we have, and how we use it. The table below shows how these elements can be brought together in practice.

Table 4: Operational monitoring plan

Outcome	Indicator(s)	How	When	Who	Where	How used
Riparian condition	% stream margins with native planting > 5m	Aerial imagery + ground-truthing	Annually	Regional council + catchment group	Annual catchment review	Progress against restoration targets
Engagement with actors	Single-point rubric assessment	Facilitated group discussion	Six-monthly	Programme coordinator	Partner meeting	Informs engagement planning
Water quality	Nutrient concentrations at key sites	Regional council routine monitoring	Quarterly (data); annually (review)	Council (collection); catchment group (interpretation)	Annual review; governance dashboard	Trend assessment; management priorities

In practice, it is often helpful to link monitoring activities to existing meetings or review processes, such as programme workshops, partner meetings, or annual reviews. This helps ensure that monitoring remains embedded in ongoing work, rather than becoming a separate reporting exercise. Where monitoring is tied to specific forums and moments, the information is more likely to be discussed, interpreted and acted on.

The action plan should be reviewed periodically, particularly after the first rounds of data collection. Some indicators may prove more useful than expected; others may turn out to be impractical. The plan should be treated as a living document, not a fixed contract.

In many programmes, most of the data needed is already being collected by different agencies and partners. The main workload is often not new data collection, but integration and sense-making. This brings together information from different sources, interpreting what it means in context, and connecting it to the decisions that need to be made.

Related pages on the Learning for Sustainability website

This guide sits within a wider body of work on the Learning for Sustainability website, where related resources continue to be updated and extended. The pages below provide additional context, tools and examples that complement the approach outlined here. Each page includes curated and annotated links to a wide selection of open-access resources from across sectors and regions.

Indicators and metrics hub – https://learningforsustainability.net/indicators/
The main entry point for indicator-related resources on the site. This guide is designed as a practical companion to this hub.

Indicator resources and frameworks – https://learningforsustainability.net/developing-indicators/
A practical overview of how indicator systems are designed and used, including common challenges and links to key resources.

Monitoring, evaluation and learning (MEL) hub – https://learningforsustainability.net/monitoring-evaluation-and-learning/
Resources and reflections on working with evaluation and learning in complex, multi-actor settings, including adaptive and developmental approaches.

Evaluation in complex settings: reflections on practice and evaluator roles –
https://learningforsustainability.net/post/evaluation-in-complex-settings/
A reflective post exploring how evaluation supports learning and adaptation, and how evaluators work in embedded, facilitative roles.

Theory of change: improving programme understanding –
https://learningforsustainability.net/theory-of-change/
Introduces theory of change as a way of linking activities, outcomes and assumptions, supporting indicator selection and interpretation.

DPSIR – https://learningforsustainability.net/dpsir/
The Drivers, Pressures, State, Impacts, Responses framework and its applications in environmental and sustainability contexts.

Facilitation guides, tools and techniques – https://learningforsustainability.net/facilitation/
Resources to support the collaborative processes that underpin indicator development, including working across perspectives and building shared understanding.

These resources are intended to support ongoing learning and adaptation, and to be used alongside the processes outlined in this guide.

About this guide

This guide responds to a gap I have noticed over many years of working with indicators in collaborative settings. There is plenty of technical guidance on indicator selection and design, but much less on the practical, relational work of developing and using indicators in complex, real-world situations. I hope it proves useful in practice.

This guide will continue to evolve as it is used and refined over time.

If you have feedback, questions, or would like to discuss how this guide might be used in your context, I would be happy to hear from you.

About the author

Will Allen is an independent evaluator, facilitator and systems practitioner based in Ōtautahi Christchurch, Aotearoa New Zealand, with more than 30 years of experience in environmental and sustainability settings. His work focuses on collaborative process design, monitoring and evaluation, and learning in complex, multi-actor settings. He is the developer of the Learning for Sustainability website.

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