Theory-of-Change Visuals: Using Diagrams, Metaphors, and Symbols to Communicate Complex Ideas and Get Buy-In

Simon Lambert
Te Tira Whakamātaki, Christchurch, New Zealand

Micheal Heimlick
Te Tira Whakamātaki, Woodend, New Zealand

Mariella Marzano
Forest Research, Roslin, Scotland

Melanie Mark-Shadbolt
Te Tira Whakamātaki, Rangiora, New Zealand

Valence Smith
Auckland University of Technology, Auckland, New Zealand

Abstract: *Everyone can imagine a situation in which they have put in countless hours of work on a new measurement and evaluation framework and, when it is time to get feedback or present their ideas, they have been met with 1,000-yard stares. Conventional approaches can sometimes struggle to engage stakeholders and convey complex concepts. To address this, authors of this article propose a unique, visually based approach that integrates metaphors and symbols into measurement and evaluation frameworks with goals of getting buy-in, portraying complexity, and making evaluation fun for everyone. Termed theory-of-change visualizations, this methodology emphasizes effective communication and facilitation—two key skills authors argue every evaluator should have. The authors advocate for the use of metaphors and symbols that resonate with stakeholders' experiences and contexts to anchor frameworks in relatable imagery (such as nature-based symbols or culturally significant metaphors). Illustrated through diverse case studies and practical examples, the approach's usefulness is demonstrated across various contexts, including in both small and large programs with varied outcomes and dynamics. Insights into selecting appropriate metaphors are provided, considering factors such as program characteristics, local context, and audience preferences. Additionally, potential limitations and challenges, including the requisite time, resources, and stakeholder buy-in, are acknowledged and addressed. Integrating visuals portraying metaphors or symbols into frameworks offers a promising avenue for enhancing engagement, understanding, and buy-in for evaluation. By embracing creativity*

Corresponding author: Micheal Heimlick, Te Tira Whakamātaki, 5 Jury Lane Woodend Canterbury 7610, New Zealand; micheal@ttw.nz

39.2 (December / décembre), 288–312 doi:10.3138/cjpe-2024-0028

and inclusivity in evaluation practices, this approach can help navigate the complexities of program evaluation for those not in the field while, at the same time, fostering meaningful dialogue and decision-making.

Keywords: *facilitation*, *frameworks*, *metaphors*, *symbols*, *visuals*

Résumé : *Tout le monde peut imaginer une situation où ils ont dû passer d'innombrables heures à établir un nouveau cadre d'évaluation et de mesure, et, au moment d'obtenir des commentaires ou de présenter leurs idées, ont été confrontés à l'indifférence générale. Avec des approches conventionnelles, il peut être difficile de mobiliser les intervenants et de communiquer des concepts complexes. À cette fin, les auteurs de l'article proposent une approche unique et visuelle qui intègre des métaphores et des symboles aux cadres de mesure et d'évaluation, dans l'objectif de mobiliser les personnes concernées, de rendre la complexité de situations et de rendre l'évaluation amusante pour tout le monde. Appelée « visualisations de théorie du changement », cette méthodologie met l'accent sur une facilitation et une communication efficaces — deux compétences clés de chaque évaluateur/évaluatrice, selon les auteurs. Les auteurs préconisent l'utilisation de métaphores et de symboles pertinents pour les expériences et les contextes des intervenants, pour ancrer les cadres dans des images familières (comme des symboles fondés sur la nature ou des métaphores culturellement significatives). Illustrée par diverses études de cas et des exemples pratiques, l'utilité de l'approche est démontrée dans divers contextes, y compris pour des programmes de petite et de grande taille, avec des résultats et des dynamiques variés. Il est question du choix de métaphores appropriées, en tenant compte de facteurs comme les caractéristiques du programme, le contexte local et les préférences du public ciblé. De plus, on note des défis et des limites possibles, comme le temps requis, les ressources et la participation des intervenants. L'intégration d'éléments visuels représentant des métaphores ou de symboles dans des cadres est prometteuse pour l'amélioration de la participation, de la compréhension et de la mobilisation à des fins d'évaluation. En embrassant la créativité et l'inclusivité dans les pratiques d'évaluation, cette approche peut aider à naviguer les complexités de l'évaluation de programme pour ceux et celles qui ne sont pas des professionnel.le.s du domaine tout en encourageant un dialogue productif et la prise de décision.*

Mots clés : *cadres*, *facilitation*, *métaphores*, *symboles*, *visuels*

Everyone reading this can imagine a situation in which they have put in countless hours of work on a new measurement and evaluation framework and, when it is time to get feedback or present their ideas, they have been met with glazed eyes or 1,000-yard stares. The authors of this article have certainly experienced this, and especially early on in a career, it is easy to attribute this to a distinct lack of interest in the minute details of measurement and evaluation (especially when organizations are "forced" to do an evaluation as a funding requirement). This we understand: Evaluation is not exciting for everyone like it is for us evaluators. Considering the (sometimes) monotonous and "dry" nature of outputs, indicators, and evaluation theories to those outside the field, it is certainly understandable that there is not a universal love for evaluation out there. It can also be easy to push through that disinterest, chalk it up to the sentiment that "evaluation isn't for everyone," and continue to utilize tried-and-true processes to complete projects. After all, perfect is often the enemy of done!

But hold on—as evaluators and as a community of practice, are we not trained to believe that evaluation should be for everyone? That it is in the best interest of organizations to use evaluation in decision-making? That accessibility to our methods, theories, and approaches is the key to their buy-in? By these standards,[1] does that not mean that the disinterest we sometimes feel from clients and organizations are us as evaluators? Are our tried-and-true methods of creating measurement and evaluation frameworks sometimes at odds with accessibility and their use?

It is not an overstatement to say that it is the evaluator's core job to effectively communicate theories, approaches, frameworks, and tools in meaningful, tailored ways. This implies that it is not the audience's job to bend over backward to understand and use them. Rather, it is up to the evaluator to meet the audience where they are at and take them on an engaging journey that they see as worthwhile (engaging being the key word for a process that can, at times, be hard to access).

To us, a sign of an exceptional evaluator is one who is technically competent but who is also an equally skillful facilitator. An evaluator could be gifted with technical proficiency, but if they cannot meaningfully communicate, gather feedback, and tailor their ideas to the organization, they (and their work) will not be as effective. We are confident in that statement and believe that we are not the only ones to think this way, as one of the authors once attended a workshop by the data visualization expert Stephanie Evergreen, and on this topic, she said that if the audience feels dumb by your ideas or presentations then it is on **you**—not on them. Using this as a basis, we as authors hold the core philosophy that evaluation and facilitation are synonyms and that strong facilitation leads to effective measurement. This sentiment has been supported by researchers in other fields, who have found that using graphics and pictures can tap into better learning outcomes and bring about rich conversation (Comi & Eppler, 2011; Eppler et al., 2013; Espiner & Hartnett, 2016; Hautopp & Ørngreen, 2024; Margulies & Sibbet, 2009)

This spark from Stephanie Evergreen has led us to adopt a philosophy that has fundamentally shaped the approach we have taken when creating measurement frameworks and evaluating programmes. During the online work environment necessitated by the COVID-19 pandemic, where we found ourselves with a sudden influx of requests to make new measurement and evaluation frameworks, we found it vital to find new and innovative ways to communicate with an audience facing numerous demands on its attention. Through this exploration of new ideas over the last couple of years, we have taken well-established measurement and evaluation framework tools and processes (e.g., using logic models to talk about outcomes) and adapted them to be more responsive to our audiences by using metaphors and "theory-of-change visualizations" to get them excited and engaged about their framework. In doing so, we have found success working toward what our audiences *really* wanted to do—evaluate in complexity. This was especially relevant when we worked with many organizations with overlapping, yet varied, goals on the same program. The audiences we worked with intimately understood that social programming, or any programming for that matter, does not happen in a vacuum. It is subject to political change, policies, public sentiment, disasters, and—perhaps the most pertinent factor—time. Using this approach helped reassure audiences that you can have an effective and responsive structure to evaluate within the inevitable complex circumstances they are or will be dealing with.

WHAT ARE THEORY-OF-CHANGE VISUALS?

When we say "theory-of-change visual" what we are really describing is a diagram, picture, or visualization of a program, how multiple programs work together and push for change, or even how an organization wants to operate daily (hence, the theory of change wording). In the past, we regularly relied on tools like logic models in our facilitations because we found that they are a good way to display multiple parts of a program or organization's path to implementing it. While we do not believe that evaluators should abandon logic models, evaluation matrices, or other theories to do this job in favour of theory-of-change visualizations, we do believe that theory-of-change visualizations are better at helping the audience better grasp and talk about complex social change. On more than a couple of occasions, we have seen that tools like logic models are not great at raising the heart rate of those sitting in the audience and getting conversations flowing. Without that excitement and engagement, facilitation becomes much harder and, without that, the level of buy-in and amount of quality feedback you get starts to suffer. The result can be a difficult-to-implement measurement framework or evaluation.

However, what did grab people's attention and got them genuinely enthusiastic to talk about evaluation was grounding our frameworks and approaches in a **metaphor** or **symbol**(s) that had deep meaning to them (e.g., "this program can be thought of as a . . ."). Often, this metaphor/symbol was workshopped via a document review and multiple targeted conversations (i.e., ones with a specific lens on looking for that metaphor or symbol). This was then visualized by us so we could more easily talk about what we were hearing and seeing, portray complex ideas in an accessible way, and appeal to multiple learning styles (e.g., using written descriptions, visuals, and conversations). This process is certainly easier said than done, but our hope is that this article will outline how we have successfully done it.

There are no hard-and-fast rules for what the metaphor or symbol can or needs to be. It could range from something nature-based (trees, animals) to human-based (a beating heart) to something completely abstract (e.g., circles, squares, arrows together creating something novel). It could be culturally significant (assuming you have permission to use that symbol) or even reflective of the place, space, and land you are working on (e.g., the prairies or mountains). The important thing underlying your choice is that it must be meaningful and engaging to those you are working with. Without that, it is not going to garner any more buy-in than logic models or other processes would. This means that the metaphor or symbol ideally should be chosen by the people you are working with (although, in our experience, it might help to come prepared with some ideas or examples, especially if the group of people you are working with have not thought about their organization that way before).

For example, many of the authors listed on this paper are employed at Te Tira Whakamātaki (TTW)—a Māori environmental not-for-profit. To help get those we work with and our wider staff on board with the way we evaluate, we decided to create a theory-of-change visual. We recognized the need to choose the right symbol, as communicating what our values and our evaluation strategy was as important as the measurement itself. We looked at our values, what we wanted to embody (our identity as an organization) and decided that the ruru (or New Zealand morepork) was an accurate symbol to represent us. The ruru is an expert in the forest and a guardian, protector, and advisor who is legendary in Māori lore[2] as a bringer of news (bad and good) through its connection with the spiritual world. This is symbolic of our name (which roughly translates into "the watchful ones"), the type of work we do where we bring together Indigenous experts to protect biodiversity and communicate vital environmental news to Māori and allies across Aotearoa. To us, the ruru was the perfect symbol for communicating our values and our subsequent evaluation efforts (see how we did that in Figure 1). It has since helped us talk about what we stand for, why we do the work we do, and how we do it. We have found that it is much easier to show the diagram in Figure 1 and explain the different and unique aspects of the ruru and to explain what TTW is all about. It has allowed us to talk about our work, and our evaluation of that work, in a meaningful, accessible way that many in our circles would understand at a glance.

At the very least, the metaphor or symbol chosen should be deeply rooted in how people are talking about the program or organization. We have done this by starting out with a conversation about how everyone "sees" the program, initiative, or organization and by listening intently for any mentions of phrases such as "we are like a . . ." or "I've always seen us as a . . .," or even "I've always imagined us as a . . ." These are clues to a potential metaphor. At this stage, it is important to note that this process takes time to get right but that it also forms the foundation of the rest of your work (e.g., trust, relationships that lead to meaningful and engaging evaluation processes). We have found that it usually takes several conversations and drafts of the visual to get right. The bonus to doing this, however, is that it gets people talking, thinking, and excited about evaluation. It does bring us back to our original point, however, that facilitation skills are key to unlocking the potential for this approach.

Figure 1. Te Tira Whakamātaki's values-based measurement diagram featuring the ruru

Source: Te Tira Whakamātaki.

WHAT DO YOU NEED TO FORM THE FIRST VERSION OF THE THEORY-OF-CHANGE VISUAL?

While we acknowledge that we are still experimenting with this approach,[3] we have also discovered some common factors that make a big difference for this approach. As we have said, evaluators are as much facilitators as they are collectors of data. It is also not surprising that it can be hard for some to directly talk about programs or organizations in a more abstract, metaphorical way. However, your job in this, as a facilitator of this approach, is to ensure everyone can be included in it, regardless of the resistance you may face when starting the process. To do this, you should have a great deal of **time** built into the process and, along with that, **patience** to help bring everyone along and wait for the metaphor or symbol to reveal itself. There is also a likelihood that those you are working with have not seen evaluation and measurement done this way, meaning that you may need to convince them that this is a valid and worthwhile approach (either through a response for proposal [RFP], internal conversations, or by demonstrating it). In our experience, some in the room will be immediately excited and "onboard" with this approach, whereas others will need to see the process and be convinced of its usefulness and, ultimately, contribute to it. Either way, it takes time, patience, and—perhaps most importantly—a willingness to be *creative*. After all, you are trying to create a visual that shows how a metaphor or symbol meaningfully represents the program or organization, all the while trying to demonstrate the complexity of it. Therefore, the necessary creativeness should come from both the evaluator and clients and the easiest way to do this is through a collaborative group process. Think of yourself as a vehicle for the ideas of those you are working with. You can certainly suggest ways theory-of-change visuals can be displayed, but your goal is to portray their ideas in ways that can be measured and widely understood.

The diagram in Figure 2 is one example of this process. It comes from an organization based on the Treaty Territories of Saskatchewan. They commissioned us to help revise their evaluation strategy, and we proposed that we use their values and a metaphor meaningful to them and the land they were on as a backbone for that revised strategy. Importantly to this process, this organization also had a strong desire to decolonize its programs and organization. After reading through many years' worth of materials and thinking about where they wanted to head as a group, we concluded that all the elements they needed for a good evaluation experience were already there. They had solid interconnected values that the organization and those they worked with liked; they had good systems in place for data collection and previous evidence to show what outcomes they had been able to facilitate. What they were missing, however, was a way to connect those pieces and communicate that work (internally and to the public).

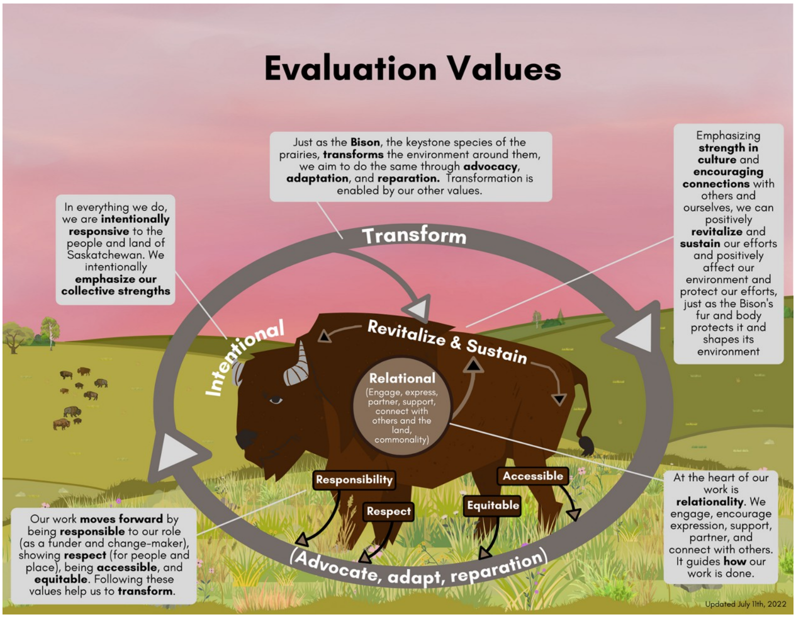

Figure 2. A Canadian example of a values-based system for measurement

Source: Micheal Heimlick, Two Bridges Consulting.

This is where the theory-of-change visual made a difference in the process. To reflect how their values worked together as one and to show their commitment to decolonization, we proposed using an image of the bison on its natural territory—the prairies (Figure 2). This was partly inspired by Wanuskewin's reintroduction of bison to the prairies, which, to many, was and continues to be an act and symbol of decolonization in a colonial place (see also Gardiner, 2023). It was also chosen because of the bison's importance to the environment around it. Bison are a keystone species in the prairies and introducing them has obvious and subtle positive effects on its wider environment (see Byington, 2023). It is a symbol of the complex ecosystem-style impact and accurately reflected this organization's aims, intentions, and purposes on the land they worked on. Importantly for the evaluation process, having the diagram in Figure 2 helped spell out assumptions people had about their organization's values and identify what they wanted to measure (i.e., revitalizing and sustaining their environment through connections and emphasizing cultural strength). It also shows the ways in which they could do that (i.e., revitalizing and sustaining through responsibilities as a funder, respect for people and place, accessibility, and equity of programming). Finally, it gave them a way to systematically understand their intended impacts and how they influence one another.

Above all, this approach requires that the evaluator adopt a certain **lens**. You, as the main facilitator of this process, will oversee the identification of potential metaphors, symbols, or even values that are usually taken for granted among the circles you are entering. In our experiences, it is not uncommon for projects or organizations to have an established, but implicit or underlying, understanding of what they are trying to achieve (often tied into their organizational culture). We have found that it is natural for individuals to have varied perspectives on how they view a program, initiative, or their organization. However, it is also likely that they have similar long-term goals or impacts they want to achieve (e.g., systemic change; environmental sustainability), despite (possibly) different ways of getting there or approaching the issue. When this is the case, it will mean that those long-term aspirations are taken for granted and spoken about casually or even cryptically. All of this means that it is your job as the facilitator to adopt a detective-like lens and search for clues about what symbols, words, values, or even metaphors people are using to talk about the program or organization. We have found that people will often use them in everyday conversations and not realize that they are. Initially, we were surprised about how often metaphors, similes, and the same words or language are used to talk about a given program or organization. It is your job to gather those words, thoughts, and comparisons because they will be vital to ensure buy-in for your theory-of-change visual. If you are able to identify and use these portrayals it will go a long way in helping you forge the first version visual that you can use in the rest of the process.

Concretely, you will also need several tools to help you communicate ideas and form the theory-of-change visual. The first thing you will need is a platform that you can use to draw and test your ideas. There are many available, but we recommend beginners to the process use a platform like Canva. At this stage, we would like to point that we have yet to mention "artistic skill" as a requirement for this process. This is largely because the authors of this article are distinctly lacking this skill and, because of that, rely on online platforms to help them draw something that looks good. Canva is recommended because it is relatively affordable and has pre-built assets that can be modified to suit your purposes. We have used it to create nearly every theory-of-change visual we have created to date.

One final piece that is useful in this process is accessing existing data or gathering novel data meant for this specific purpose. *Data* is defined broadly here but, using the lens we spoke about earlier, it essentially means having something to read or inform you of how people are talking or thinking about the program/organization. Having this will go a long way in helping you create the first draft of the theory-of-change visual because it will be reflective of those around the table. In the past, we have relied on document reviews (anything that speaks about an organization's aims, values, or goals here is particularly useful), semi-structured interviews, and surveys to gather this type of information. Speaking to an earlier point, we find it is difficult for some respondents to answer direct questions about a program's or organization's values (because they are often taken for granted) but have had success in asking tangential questions like these:

- What motivates individuals to work on the program or in the space you are helping design the visual for (e.g., environmental, business)
- When you hear the title of the program or when you think of how it is supposed to work, what imagery or symbols immediately come to mind?
- What should guide the implementation of the program or organization?
- What impacts (or outcomes) should the program or organization have, and for who?

The underlying point of this is that it is important to engage often and get your hands dirty in the human side of the program or organization. The more conversations, active listening, and questions you ask, the easier it will be to pick up on the clues you are looking for and "solve" the visualization. Not only that, but doing this will also help build the relationships necessary to help the creativity and establish trust in the process (including in you as a facilitator). Once you can answer some of these questions, you can use word analyses, thematic analysis, or even quantitative means to uncover which way is best to visually represent the program or organization. As another bonus, having this information can help provide you with the confidence that your first draft will be relevant and, as a result, ideally mean refining subsequent versions will be smoother.

A WORD ON VALUES-BASED MEASUREMENT[4]

To help assist you in the detective work we are advocating for, we wanted to share our experiences in exploring values as a starting point for forming the "parts" for your theory-of-change visuals. During data-gathering stages and when having conversations about what this visual could look like, we have often found ourselves lost and overwhelmed with possibility. While this is exciting to some (including us), we recognize that it might be off-putting for others. Therefore, we suggest narrowing that detective lens and looking specifically for the values that are being used to talk about, implement, and report on the program or organization (note that this has some theoretical backing in principles-focused evaluation; Patton, 2018). We find that, by focusing on exploring and naming values, the facilitator can better frame and ground the metaphor or symbol. Another advantage of using values to form the visual is that they can crafted to be specific enough to serve a purpose in the evaluation, but broad to allow for everyone to see how they fit with it. This helps to increase buy-in for the evaluation.

It is important to note that we are defining values and principles differently for the purpose of creating theory of change visuals. The two are complimentary and often inform each other, but when we refer to 'values' we mean the qualities or standards that govern behaviour and are hard to change. They are often one word in length and can reflect the reasons for the things we end up doing daily (e.g., honesty). Principles are formed from values but interpret them as rules or beliefs that also govern behaviour and can be changed over time (e.g., I'll never lie, even if it is to prevent harm). Values inform principles and are often the '*why*' to the 'how' that are principles. We recommend seeking the 'why' by seeking relevant values and using that as the starting basis for creating the working parts of the theory of change visual.

HOW TO CHOOSE THE RIGHT METAPHOR OR SYMBOL TO VISUALISE

Now that you have the right state of mind and tools and have gathered all the necessary data, the real fun starts. It is time to choose what you are going to visualize. Unfortunately, there is no step-by-step guide on how this works. Fortunately, however, this affords you as the facilitator complete freedom to use your creativity to make something meaningful. That said, we do have some guidelines that could help you identify the best possible metaphor or symbol to visualize.

Overall, the metaphor or symbol should reflect the characteristics or qualities of the program or group. This may seem obvious, but understanding this at the start can help narrow down the possible choices. Ask yourself what the program is designed to do and how it is being implemented and use that as a starting point. For example, if the characteristics of a program are that it is adaptable, flexible, and able to quickly change directions then perhaps something small and light might be a good choice, such as a hummingbird (i.e., an animal that can not only hover in place but also change direction in an instant if needed). If the program or organization is offers long-term sustainable funding to participants then a well-established (large) tree might be a good choice (i.e., a tree that supports the forest ecosystem around it with its canopy and own ecosystem—something that should be around for a long time). Using these crude examples, you can see how choosing a metaphor or symbol that reflects the characteristics of what you are working with means that you can begin to tell a story (e.g., our program is like a hummingbird because it is adaptable and able to change direction at a moment's notice—just as the hummingbird can fly to a new flower in an instant, we can also change what we are offering to meet the needs of participants).

Another tip to use when choosing a metaphor or symbol is to try and root it in a local context and, just as importantly, understand what implications it has (i.e., the same symbol can mean different things across the world). In our experience, the metaphor/symbol chosen for the theory-of-change visual needs to be tailored or tied to the environment in which the program or organization operates. For example, using the same metaphor in Saskatchewan, Canada, and New Zealand might have vastly different implications and degrees of relatability.[5] Therefore, we have found the most success when we can root the metaphor or symbol in local environments relatable to the people living there. Not only does this help reflect the complexity of the program in its natural environment (i.e., the program does not exist in a vacuum), but it also ideally helps the viewer instantly situate the visual in something they are familiar with.

The last key factor to consider is the field in which the program or organization is based. If you are working with an environmental organization, it might make sense to choose a nature-based metaphor or symbol (e.g., a plant or an animal). If you were working with a program that focuses on building and providing affordable housing, then perhaps a house metaphor might make sense. These are obvious, but our point is that the more you can establish a place and a space for the metaphor, the more relatable it will be to those who are going to be using it. This also means that it will be easier to facilitate the rest of the process. Your goal is to portray complexity in an instant with something recognizable and meaningful. This is a challenge, but it is achievable with the right lens, context, and relationships.

To better demonstrate these key considerations, let us turn to a theory-of-change visual we recently created in Aotearoa New Zealand. This was created for a group of community and government organizations within the Predator Free 2050 movement.[6] The movement itself is environmentally based and aims to preserve biodiversity across the country by eradicating introduced species (the three main targets are rats, stoats, and possums as they are the main killers of native endemic birds, like the kiwi). Termed collaborative groups, these were brought together by the Department of Conservation (DOC) under a collective impact model. They all have unique and varied expertise (e.g., scientific expertise, sociologists, experts in Indigenous knowledge, communicators, connectors, etc.) and often are the ones on the frontlines implementing programming and are the knowledge holders needed to carry out the vision of Predator Free 2050.

Though conversations, a documents review, and a short survey with collaborative group members, we found that the group prides themselves on being community-based, agile, and able to adapt to changing circumstances (a common theme in environmental programming). They also saw themselves as having a 'birds eye view' of the conservation system as well as an ability to act when they saw necessary. We asked what imagery, symbols, or metaphors came to mind when they heard the words '"Predator Free 2050," and the word cloud shown in Figure 3 emerged.

Using that same methodology, we also asked what values should lead the collaborative group work, and Figure 4 includes those mentioned.

Using these methods (in conjunction with our own experiences in the collaborative groups and a document review), we had the information we needed to

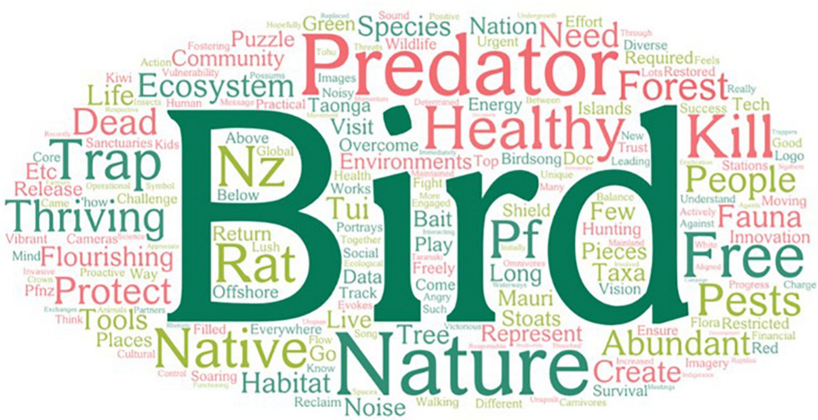

Figure 3. Survey data for the question "When you hear the words, "Predator Free" what imagery, metaphors, and/or symbols immediately come to mind?'"

Source: Te Tira Whakamātaki.

Figure 4. Survey data for the question "In your opinion, what values should guide the work of the PF2050 Collaborative Groups?"

Source: Te Tira Whakamātaki.

choose the right metaphor. It is not hard to see in the first word cloud (Figure 3), but it was clear that the metaphor needed to be a bird. It could not be just any bird, however, but the *right* bird. It needed to have characteristics such as agility, speed, intelligence, and be native to Aotearoa New Zealand. Assessing our options, the clear choice was the kārearea, or the New Zealand falcon. This bird is one of Aotearoa's top natural predators, is endemic, and is one of the fastest birds known to this land (reaching speeds up to 220 km/hr), but it is also extremely agile, adaptable, and maneuverable. It is known to take high flight, scan its surroundings, and make decisions on which prey to pursue. In other words, it gets the definitive "birds-eye view" and uses that information to act. Finally, it hunts stoats. These factors made it a near-perfect metaphor to describe the values and work of the collaborative groups. It represents what the groups stand for, how they do their work, and—most importantly—**why** they do the work. Working with collaborative group members, we mapped the values they chose to different parts of the kārearea (using a picture of it we created on Canva), and it was used to have effective conversations about what the groups wanted to achieve as well as how and why they wanted to. Figure 5 shows the visualization of the metaphor, and the concepts in it were used to create a full evaluation framework, complete with outcomes, indicators, and outputs.

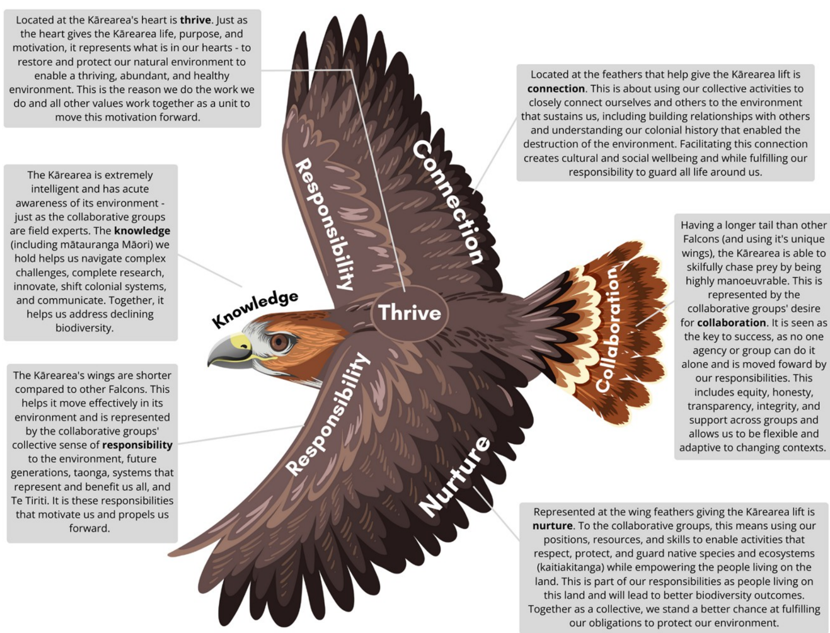

Figure 5. The kārearea diagram stemming from the analysis of the Collaborative Group Process

Source: Te Tira Whakamātaki.

 doi:10.3138/cjpe-2024-0028

A REACTION TO THEORY-OF-CHANGE VISUALS—EXPERIENCE OF AN END USER

We thought it was important to have an end-user's perspective on this approach. One of the authors of this article experienced this approach from start to finish while it was still being developed. Here are his experiences with it:

> As the former executive director of the Network Environments for Indigenous Health Research (NEIHR) National Coordinating Centre (NCC), I was involved in the co-design and implementation an Indigenous approach to frame the performance and evaluation components of the programme. This involved considerable online meetings that were a necessary response to the COVID-19 pandemic but also the only way that researchers, administrators and federal officials could discuss the framework across several time zones.
>
> Working in a cross-cultural, cross-continental space of Indigenous health research, I quickly saw the benefits of chunking down our approach to first identify appropriate metaphors and then align these metaphors with images, terms, and short narratives to help us communicate the key aims and then the progress of our networks. While the images may appear to be simple, even simplistic, it is important to understand the selection of an image, and why one is preferred over another for reasons of relevance and provenance. While bears and eagles are keystone species in important ecosystems in which Indigenous communities continue to exist, they are also ancestors and relatives, and this familial aspect of many Indigenous metaphors elevates them in terms of culture, identity and responsibility.
>
> The process of selecting an image for Indigenous groups draws out interesting, indeed I would argue unique, conversations based on traditional teachings and modern aspirations. However, I'm reminded of a warning: "the price of metaphor is eternal vigilance" [Rosenblueth and Wiener, cited in Lewontin, 2001, p. 1263]. We had the foundational support of hard data, arrayed in spreadsheets, but this enabled us to easily track and refer to discrete scores of various qualitative and quantitative indicators and also to groupings of indicators, and for each individual NEIHR network. And in my role as executive director, having to speak regularly to the framework and its messages to federal, research, and wider network supporters and participants, I had clear and arresting visuals to support any presentation, particularly when communicating our partners' contributions to understanding the progress of multiple research projects taking place "coast-to-coast-to-coast" across Canada.

HOW TO CREATE AND FACILITATE USING THEORY-OF-CHANGE VISUALIZATIONS WITH ORGANIZATIONS

Now that the rationale and benefits of using this approach have been detailed, it is appropriate to show a guide on how you may create and use the theory-of-change visuals. The process of creating and using these visuals will be heavily dependent on the context you are working in (including who you are working with). Therefore, we recommend you take the steps we outline next and make them yours. Treat these as a set of principles that can help you get started on key parts of the process. The details and nuance will rely on your creativity, patience, effort, and ability to be a facilitator.

Step 1. Gather the necessary information to understand your context

We covered this step earlier, but it is important to reiterate as it forms the foundation of your visual. Take the time to gather the information you need to confidently create your visual (including novel data collection). Use any research skills you have and apply a "detective lens" to your interpretation of how people are thinking about, talking about, and implementing a program.

Step 2. Pick the right metaphor or symbol and create it

Once you have the information you need, it is time to select the right metaphor/symbol. Notable to this process is understanding the local context and picking something that will resonate with your audience.

To help with this process, lean on the data that you have already collected and start drawing out ways that it all works together to tell a story. We have also done the opposite, where we start with a metaphor/symbol that is commonly mentioned and map our data or parts onto that metaphor (as was the case with the kārearea example). This is akin to creating a logic model—some people prefer to work from left to right, and others prefer to work in the opposite direction. Do what makes sense to you but ensure that your metaphor/symbol is in the place and space it needs to be.

Pick a platform like Canva (or anything equivalent) and create your visual. We recommend adding some minimal text to the diagram to help readers understand why certain parts are mapped onto the picture where they are. These placements should be **purposeful** and there for a concrete reason. As with a logic model, the reader should have all the necessary details to get the big picture on a single page. Tips and tricks for this stage include the following:

- Pick something common to the area or field you work in for quick relatability (e.g., an animal, a plant). Draw your own if you have artistic skill, pay an artist, or use a premade asset on Canva.
- Use the parts of what you chose to tell a story of how the individual parts/data you found combine to tell a bigger story. The whole of the metaphor is more valuable than the sum of its parts. Emphasize that each part work with the others and push in a positive direction. Below is an example of a metaphor using a wharenui,[7] which was specifically chosen because it is composed of different parts. Each part plays a significant cultural and physical part of the entire building, meaning that it was a perfect way to demonstrate the five different values that encompass good research with Māori communities.
- Do not be afraid to add backgrounds to your visuals. This helps add another layer of depth to the theory-of-change visualization and allows you to communicate how the program or organization interacts with its environment. Figure 6 is an example of using a background to add to the visual, as was the visual with the bison earlier in the article.

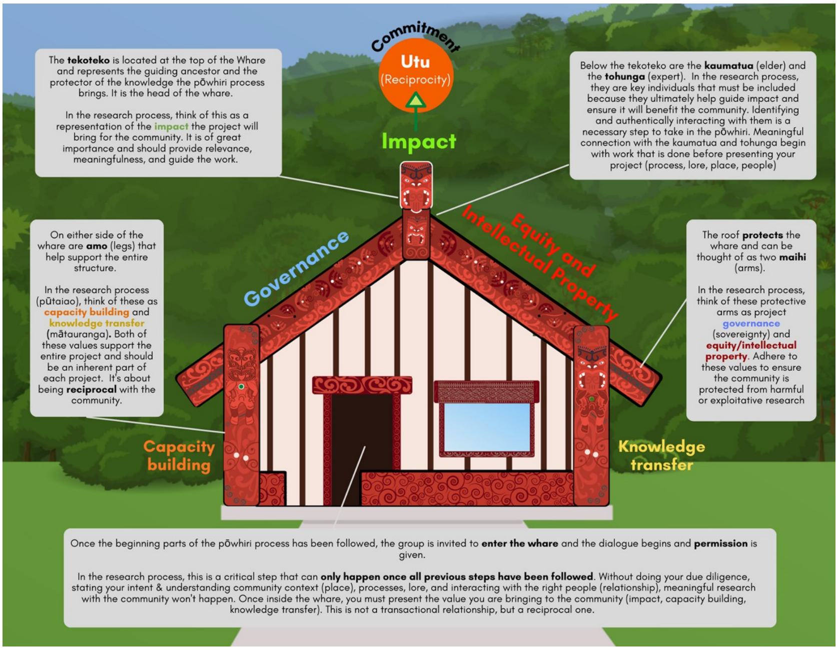

Figure 6. An example of a values-based diagram that shows how different parts of a metaphor can be mapped on to individual values

Source: The Marae Framework from Te Tira Whakamātaki.

- It helps to think abstractly. This is not only where creativity is necessary but also where the beauty of the method occurs. The first challenge is to see how the parts you identified map onto a symbol or metaphor. The second challenge is to demonstrate how these can be used to show how the parts perform different, yet contributing, roles and form an overall narrative back to the roles, intentions, and purposes of a program or organization (e.g., the protective fur on a bear can be used to demonstrate survivability and sustainability of an initiative).
- It is helpful to create the visual with those you are working with. While you do not have to sit down for hours with them, bouncing ideas of potential metaphors to gauge their reaction can save you a lot of time down the road. This is where relationships are important and help facilitate the work.

Step 3. Use the right method to present your visual

At the start of this article, we argued that being an evaluator is as much about facilitation as it is about measurement. With the previous two steps completed, you should have the theory-of-change visual ready. Now, however, is the time to show off your facilitation skills and present your visual.

Picking the right method of presenting the visual is crucial. This will look and feel different each time, but we have found success in using both YouTube and PowerPoint (noting here that Canva also has a competent presentation system). Regardless of the platform you choose, it is important to present your visual one "part" at a time.[8] You will notice in the previous kārearea example all the parts are displayed (i.e., values such as responsibility and accompanying text). In our experience, we have found that sometimes presenting everything at once can inhibit effective storytelling. Rather, having each part of the visual pop up one by one and using that to present helps you bring your audience on a journey (e.g., one part of the metaphor per slide). It also gives you an opportunity to talk about each part individually to emphasize its importance while placing it within an overall narrative.

If you are presenting to many people, consider creating a YouTube video of your presentation that people can view on their own time. The goal here is to get people excited about the evaluation and buying in to the process. The second goal is to obtain as much feedback as possible so you can ensure that you picked the most effective metaphor/symbol. Ensure that you have built in ample time and space, and emphasize accessibility so you can get quality feedback.

Step 4. Refine your visual and metaphor

After you present your visual, it is likely that you will have to refine things based on the feedback you receive. This is an expected and positive part of the process, as the more feedback you receive, the more engaged your audience may be. The more engaged they are, the more likely they will care about the evaluation yet to happen. Be open to changes and remember that this visual needs to represent their words, thoughts, and actions first and foremost.

Step 5. Use the visual as a basis for the rest of your evaluation

Once consensus is reached on the theory-of-change visual, you can proceed with the rest of the evaluation and use it as a strong foundation. The theory-of-change visual should do exactly as it is named and provide an overview of the theory of change. It can help give you guidance on what methods, outputs, indicators, and outcomes you can include in an overall measurement and evaluation framework (especially if you use values as your "parts"). It is also likely that, during your discussions on the various drafts of the visual, you will have had in-depth conversations about what outcomes the group want to achieve and how you could possibly measure that to fit the philosophy in the visual.

Most importantly, however, this process should have garnered excitement and buy-in for the rest of the (sometimes tedious) evaluation. Instead of presenting a logic model, evaluation matrix, or 14-page document you will have given the group something that is more engaging and bite-sized to introduce the rest of the process. In our experience, this is a major factor in a successful evaluation, and it is worth spending time to get right. It is even possible that you did not get the same "eyes glazed over" look you would if you may have gotten in the past.

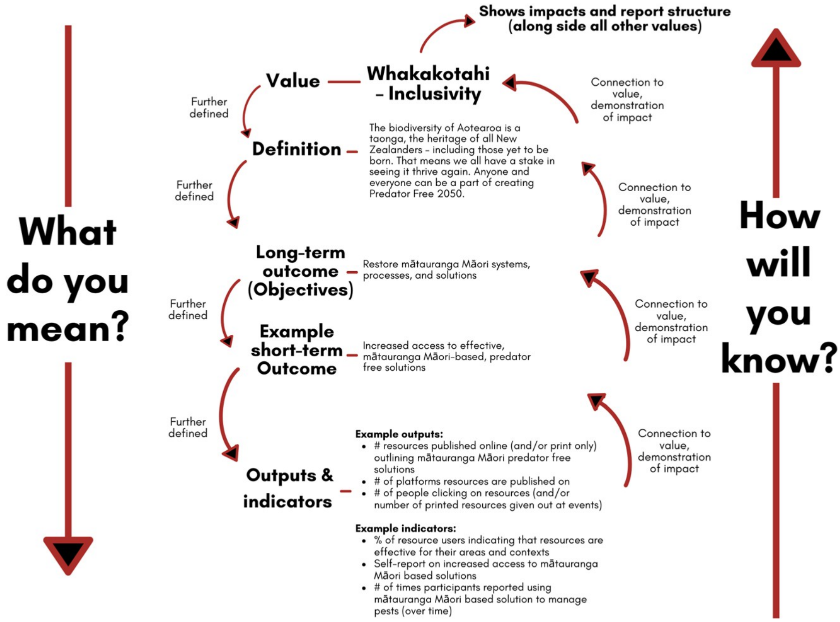

Figure 7. An example of how values can translate into full measurement frameworks (outcomes, outputs, indicators)

Source: Te Tira Whakamātaki.

Concretely, you can also use the "parts" of your visual to build out a full measurement framework. As you identify and talk about the parts of your theory-of-change visual, you start to define what they mean for that specific context. This definition leads to the creation of long-term and short-term outcomes, as well as outputs and indicators. An example of this is shown in Figure 7, where we used a value (*whakakotahi*, or inclusivity) as a singular "part" of our diagram. Heading down the left side of the figure, whakakotahi is defined and specified by the long-term outcomes, short-term outcomes, outputs, and indicators. In this case, the value of whakakotahi also represents what the organization ultimately wants to achieve (i.e., its intended impact), meaning it is the piece that you will end up measuring (in a lot of different ways). Therefore, as the diagram below indicates, as you head down into the details on the left-hand side, the value gets more and more defined. As you head back up toward the value on the right-hand side, it shows how you will know whether progress is being made toward the intended impacts. This is one way in which you can connect your visual to more conventional evaluation thinking and approaches.

WHEN TO USE THEORY-OF-CHANGE VISUALS AND WHEN NOT TO

Up to this point, this article has been written as if theory-of-change visuals are a silver bullet and will help solve any engagement problems you may have had in the past. While we believe in the power of this approach, we also know that there are certain circumstances in which it should be avoided. We expect these factors to evolve as we continue to take this approach in our projects, but we believe that you should consider **using** theory-of-change visualizations in the following situations:

1. **You are evaluating complicated and complex situations (see Patton, 2010)**
   a. We would argue that this is most often the case in socially rooted programs and initiatives.
2. **You have many stakeholders, organizations, or partners involved in designing and implementing the evaluation.**
   - This approach is useful if those at the table use different approaches or activities to achieve the same long-term goal (e.g., environmental sustainability). It lends itself well to developmental evaluation, principles-focused evaluation, and collective impact approaches.
3. **You have adequate built-in time to complete the process (including the ability to build relationships and trust) and can transfer it into a measurement framework.**
   - In our experience it takes 2–3 months of creative effort to make the theory-of-change visual.
4. **You believe the audience would respond well to a visual approach (e.g., community not-for-profit) as opposed to a written one (e.g., government departments).**
   - This is not a hard-and-fast rule, as we have done these with government departments. You will have to use your judgement as a facilitator to determine if it is a good fit.
5. **You are an internal evaluator and can spend your time doing this process (and following through with it).**
   - Being an internal evaluator may also help you pick up on the culture of the program or organization quicker, although you should be aware that you can also take things for granted being an insider.

Instances where we recommend **not** using this approach include the following:

1. **You are evaluating in simplicity (see Patton, 2010).**
2. **You have limited time and a small budget.**
   - When you combine this process with the need to link it to a measurement and evaluation framework and then do that evaluation, this process can be time-consuming and, therefore, cost more. Remember that this process is about getting people excited and

engaged in evaluation, and if you spend your budget creating the visual and do not end up collecting any data, it might have the opposite effect.

With these factors in mind, you can see that it is not wise to take this approach in every single evaluation. We are encouraged as emerging evaluators to maintain a large toolbox of methods, approaches, and theories, and we suggest that this be one approach that you could add to yours.

WHAT HAPPENS WHEN YOU CANNOT GET EVERYONE TO AGREE OR THERE IS NO COMMONALITY BETWEEN GROUPS?

One complication that you may encounter using this approach is that it can be difficult or sometimes impossible to find the *right* metaphor or symbol to base the visual on. This has happened to us when working with multiple groups or projects under an umbrella organization such as a government-funded program with locations across the country who are meant to be communicating and working toward common goals, despite implementing it in their own way. In these cases, it might be difficult to find a locally rooted metaphor that you could use (e.g., there are no pine trees in northern Canada and no turtles on the prairies).

You can still create a theory-of-change visual in this case, but the approach will need to be modified. Gathering data, reading documents, and uncovering what the "parts" of the visual are will still be the start the process (e.g., values, impacts, outcomes, processes, etc.). However, to remain relatable to different organizations or spots across the nation you may need to either choose *multiple* metaphors or symbols and, as a result, create multiple visuals. Remember, without that instant recognition and relatability, the theory-of-change visual will not be as effective. The trick is to ensure that the same basic information is being used no matter the metaphor it is featured in. In other words, the "parts" you identified should be present in all visuals you end up creating. The advantage of using values or broader impacts as your "parts" is that you can more easily transfer them across metaphors because they work in multiple ways. This is why we prefer to use nature-based metaphors, as it is easier to transfer parts between metaphors, meaning we can tell the story we need to in the places we visit while still providing rigour to the process.

For example, the two pictures in Figure 8 represent the theory-of-change visual for the Oranga Programme, a suite of four Kaupapa Māori–led projects aimed at restoring forest health in Aotearoa New Zealand. While all projects are working toward similar long-term goals (i.e., increased forest health and revitalization of *mātauranga Māori* [Māori knowledge]), each project had different activities (they included seed banking, using soundscapes to assess forest health, using Māori *rongoā* (medicine) to help infected trees, among others). Therefore, using one theory-of-change visual was not the best option, as it would relate better to some projects than others. Therefore, the solution we came to for the

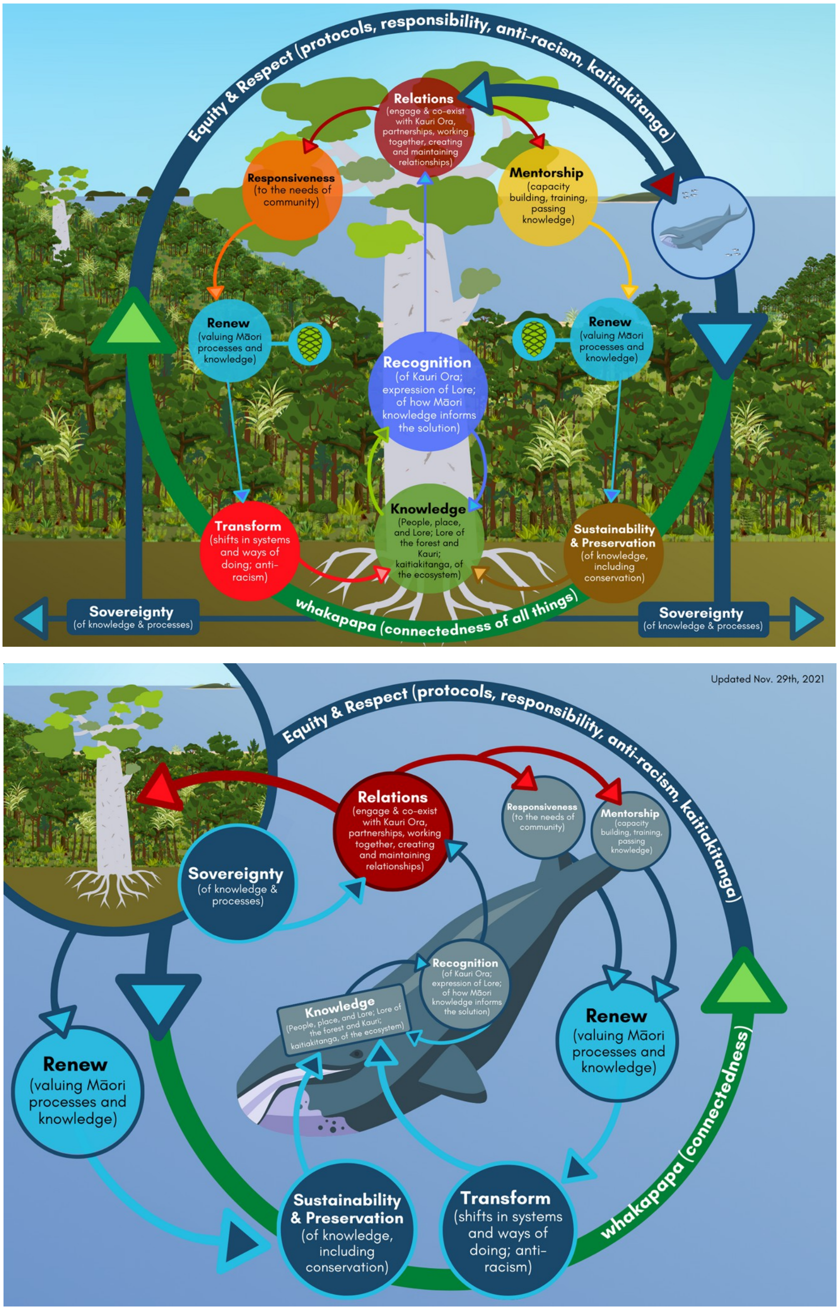

Figure 8. An example of a values-based diagram using a) a kauri tree and b) a tohorā (whale) to portray a story

Source: Te Tira Whakamātaki.

projects was to use two visuals that had the exact same "parts" to them (e.g., values such as knowledge, recognition, relations). One features the kauri tree and, the other, a *tohorā* (whale); both symbols are instantly recognizable by the projects and, more importantly, meaningful to their own projects. By taking this approach, projects were able to champion whichever version resonated most with them, and we, acting as the evaluators, could use either and still have consistency in the measurement and evaluation framework. A YouTube video (Two Bridges Consulting, 2022) was created to help explain these visuals (as per the best practices outlined earlier) and they are still in use today as guides for how the projects want to work and what impacts they want to make.

CONCLUSION

Guided by metaphors and symbols rooted in the values, experiences, and language of those we work with, the theory-of-change visual approach can help create and facilitate dialogue and reflection necessary for effective evaluations. Platforms like Canva provide accessible tools for bringing these visuals to life, enabling the integration of text and imagery to convey a cohesive narrative. The presentation of theory-of-change visuals becomes an opportunity for facilitation and to get excitement about evaluation. By telling a story by unveiling each component of the visual one by one, evaluators foster engagement and dialogue, encouraging stakeholders to reflect on their roles and contributions within the larger ecosystem of change. Ultimately, theory-of-change visuals are more than just pictures. They are powerful tools for getting on the same page, decision-making, and, importantly for us, facilitating a meaningful and relevant evaluation. After all, it is on us as evaluators if the audience feels dumb when reading our materials or hearing us talk. Let us use every tool available to make evaluation accessible, exciting, and innovative and ensure we bring people along with us on a path toward evidence-informed decision-making.

NOTES

1 Appropriately backed by the Canadian Evaluation Society's Evaluator Competencies (especially the situational and interpersonal practice domains).
2 See Keana-Tuala (2015) and Wingspan Birds of Prey Trust (n.d.) for more information.
3 At the time of writing this article, we had used this approach 22 times since 2020 (in various forms). The authors would like to thank Reciprocal Consulting and the Network Environments for Indigenous Health Research National Coordinating Center for allowing us to progress these ideas.
4 We are also working on a short article that better describes what "values-based measurement" is to us as evaluators and researchers. We intend to publish it and share it widely to help accompany this article.
5 For example, using a tree is a perfectly acceptable symbol to portray in a visual. However, choosing the right tree based on local context matters. If you use a pine tree, it makes sense in most of Canada. They are common, native species that are instantly

recognizable. If you use a pine tree in Aotearoa New Zealand, an instantly different thought comes to mind, as they are invasive species that are often blamed for killing native forests and used for economic purposes. Instead, a kauri or pohutakawa tree might make more sense to viewers in Aotearoa New Zealand because they are iconic and native species (but again, that depends on which part you are from). Both are trees, but depending on which you choose to use and where you choose to display it, it will have significantly different social, cultural, and economic implications. The goal is not to choose just a tree, but the *right* tree.

6 For more information, visit Department of Conservation (n.d.).

7 A *wharenui* is a Māori meeting house, or the main building of a community. It is a representation of significant cultural and social principles and is the main gathering place of each community. It is full of stories and is the heart of the community.

8 For an example, see Two Bridges Consulting (2022). This example is also featured later in this article.

REFERENCES

Byington, C. C. (2023, 10 October). *Quick and dirty (really dirty) guide to bison: Keystone species edition*. Cool Green Science: Stores of the Nature Conservancy. https://blog.nature.org/2023/10/10/quick-and-dirty-guide-bison-keystone-species/

Comi, A., & Eppler, M.J. (2011). Assessing the impact of visual facilitation on inter-organizational collaboration: An experimental study. *Journal of Universal Computer Science*, *17*(10), 1430–1454.

Department of Conservation. (n.d.). *Predator Free 2050*. New Zealand Government. Retrieved July 23, 2024, from https://www.doc.govt.nz/nature/pests-and-threats/predator-free-2050/

Eppler, M. J., Öste, H. F., & Bresciani, S. (2013, July). An experimental evaluation on the impact of visual facilitation modes on idea generation in teams. In *2013 17th International Conference on Information Visualisation* (pp. 339–344). IEEE.

Espiner, D., & Hartnett, F. (2016). Innovation and graphic facilitation. *Aotearoa New Zealand Social Work*, *28*(4), 44–53. https://doi.org/10.11157/anzswj-vol28iss4id298

Gardiner, K. (2023, June 3). How Canadian bison have been brought back from the brink in Saskatchewan. *National Geographic*. https://www.nationalgeographic.com/travel/article/canadian-bison-brought-back-saskatchewan

Hautopp, H., & Ørngreen, R. (2024). From training to practice: Long-term perspectives of graphic facilitation used in organisations. *International Journal of Lifelong Education*, *43*(2–3), 145–162. https://doi.org/10.1080/02601370.2024.2325601

Keane-Tuala, Kelly. (2015, 17 February). Ngā manu – birds– Tohu – signs and predications. *Te Ara – The Encyclopedia of New Zealand*. https://www.TeAra.govt.nz/en/nga-manu-birds/page-3.

Lewontin, R. C. (2001). In the beginning was the word. *Science*, *291*(5007), 1263–1264.

Margulies, N., & Sibbet, D. (2009). Visual recording and graphic facilitation: Helping people see what they mean. In *The change handbook: The definitive resource on today's best methods for engaging whole systems, easy read super large 24pt edition* (p. 366). Berret-Koehler Publishers.

 doi:10.3138/cjpe-2024-0028

Patton, M. Q. (2010). *Developmental Evaluation: Applying complexity concepts to enhance innovation and use*. Guilford Press.

Patton, M. Q. (2018). *Principles-focused evaluation—The GUIDE*. Guilford Press.

Two Bridges Consulting. (2022, 22 February). *Oranga Programme – Values based measurement (Kauri and Tohorā metaphors)* [Video]. YouTube. https://youtu.be/CifP6kY0Ndg

Wingspan Birds of Prey Trust. (n.d.). *Ruru (morepork) in Maori mythology*. Retrieved June 20, 2024, from https://www.wingspan.co.nz/maori_mythology_and_the_ruru_morepork.html

CONTRIBUTOR INFORMATION

Micheal Heimlick is a fourth-generation settler born in Treaty 6 Territory and homeland of the Métis (North Battleford, Saskatchewan, Canada). In late 2022, Micheal moved to Aotearoa New Zealand with his family to work with Te Tira Whakamātaki, a Māori environmental not-for-profit. Before moving to Aotearoa, Micheal worked with over 75 short and multi-year program evaluations and designed evaluation frameworks in both community and academic settings. These evaluations have helped organisations to understand the impact their work is having in communities and has assisted in applying for additional funding to continue the work that they do. Email: micheal@ttw.nz

Simon Lambert is from Tūhoe and Ngāti Ruapani ki Waikaremoana (Aotearoa New Zealand). He is an Indigenous geographer and currently holds the position of Chief Science Advisor (Māori) at the Ministry for the Environment. Previously, Simon was an Associate Professor in Indigenous Studies at the University of Saskatchewan. His research has focused on how Indigenous communities are impacted by disasters and emergencies, and how they can better position themselves to enact effective "disaster risk reduction." Email: simon@ttw.nz

Mariella Marzano is a social anthropologist and senior social researcher at Forest Research with over 15 years of experience in agriculture, fisheries and forestry sectors in the UK and internationally. Mariella currently leads a number of interdisciplinary research projects and/or work packages related to the human dimensions of species management, tree and plant biosecurity, stakeholder engagement and risk management and communication. Mariella also established and chairs the IUFRO Working Party on the "Social Dimensions of Forest Health" and is an Honorary Fellow at the University of St Andrews. Email: mariella.marzano@forestresearch.gov.uk

Melanie Mark-Shadbolt (Ngāti Kahungunu, Rangitane, Ngāti Porou, Te Arawa, Ngāti Raukawa, Tūwharetoa, Whakatohea, Te Ātiawa, MacIntosh, Gunn), is an Indigenous environmental advocate, dedicated to working with organisations who are committed to meeting their Treaty responsibilities and addressing indigenous rights and racial equity. Currently, Melanie holds the position of CEO at Te Tira Whakamātaki, a Māori environmental not-for-profit and home of the Māori biosecurity network, and Kaihautū Ngātahi Director Māori of New Zealand's Biological Heritage National Science Challenge. She has a specific interest in decolonising ideologies of conservation and restoration in order to address injustices and harm caused to indigenous peoples and our planet. Email: mel@ttw.nz

Valance Smith, MA, Ph.D. is of Māori (Ngāti Mahuta, Te Parawhau, Te Uriroroi, Te Mahureure ki Whatitiri), English and Chinese descent. He is Assistant Pro-Vice-Chancellor Māori Advancement and Tiriti Strategist at Auckland University of Technology (AUT), Aotearoa New Zealand, providing academic and cultural leadership across the university. This includes leading the mātauranga Māori strategy at AUT. His most recent research applies mātauranga Māori across many disciplines, including kaitiakitanga ('protection and guardianship of the environment'), well-being and design for health; for example, mātauranga Māori solutions for Kauri Dieback, and maramataka ('the Māori lunar calendar') and its connection to physical activity. Email: valance.smith@aut.ac.nz