

# Te Ara Paerangi Submission

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Kia ora koutou,

I wish to make a submission on Te Ara Paerangi – Future Pathways Green Paper as I think it has the potential to be an important turning point in the structure, function and culture of the RSI system in Aotearoa New Zealand.

While I am currently affiliated with a CRI, but also have an insight into the academic community's take on the current RSI system through my position on the GSNZ national committee, alongside several university researchers. I have attended workshops on Te Ara Paerangi and while I cannot personally speak to a number of the questions asked in the green paper, I would like to highlight some key points that I think need to be taken into consideration when shaping the next 30 years of RSI in Aotearoa.

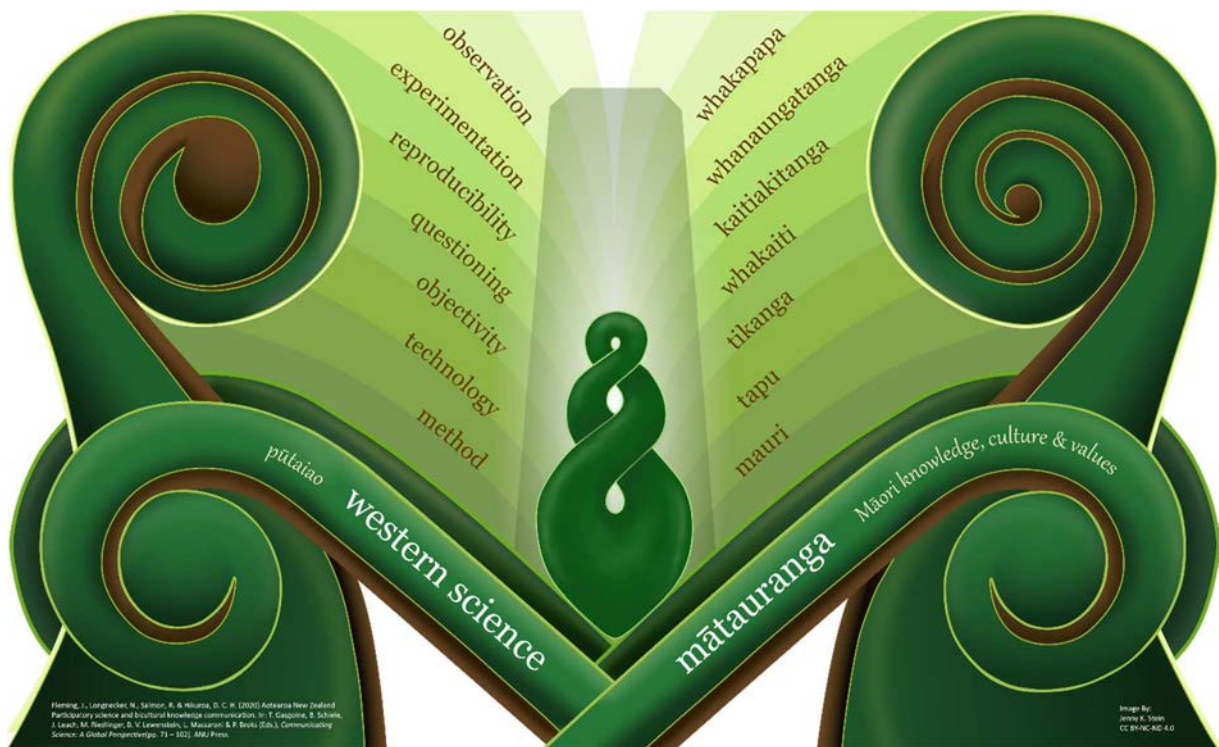
A summary of my recommendations, described and justified on subsequent pages, is:

- The NZ RSI system as a whole would benefit from adopting many of the concepts of Te Ao Māori
- Co-design and co-creation should become the norm for project development
- Perception of the general public should be changed from one of mere 'end users' to active 'stake holders' in NZ research
- Better science communication between experts and non-experts is required to prevent the proliferation of misinformation and to enhance relationships that will promote better collaboration and participation
  - Experts willing to be involved in the science communication space should be given the support they need, or else science communicators hired to do this for them
- Projects being considered for competitive funding should be required to have the following:
  - A line in their budget dedicating funds to compensation for Māori culture and language advisors, to ensure that all projects include some consideration and incorporation of Te Ao Māori
  - A line in their budget dedicating funds to science communication with appropriate non-experts (policy makers, impacted communities and the general public)
  - A designated and capable project manager whose job is to not only ensure that their project is conducted on time and on budget, but also to ensure that lines of

communication are kept open and used by all contributors, so that everyone involved in a project has the opportunity to develop the necessary respect for each other's differing expertise, and an understanding of their unique values and working constraints, to ensure project success optimise future collaborations.

## Point 1 – Changing Perceptions of Te Ao Māori

I applaud MBIE's efforts to honour Te Tiriti, give life to Māori research aspirations, and enable mātauranga Māori. Others (Māori) are better suited to determining how this can best be done but I believe the entire RSI system (and society in general) would benefit from adopting a Te Ao Māori world view. I would like to see us blend the best parts of both approaches, mātauranga Māori and western science, into a uniquely New Zealand version of research-based knowledge. This is best explained by a graphic I designed for a recent book publication:



Explanation of graphic: *Two person-like koru entities each represent western scientific knowledge/methods (left; shown with an apostrophe inside the head) and traditional mātauranga Māori (right; shown with a traditional Māori spiral inside the head). The entities are facing each other with arms outstretched in a gesture of giving and cooperation. Streaming from each of the entities are the concepts that are important to each, upon which their knowledge is built. These gestures and ideas meet in the middle to form a pounamu double-twist, symbolising the joining of cultures (and ideas), with the shadow of a tiki (adze) in the background symbolising the potential strength the two cultures have when bound together in this way. The variety of greens evoke harmony with nature and the environment and reinforce the concept of internal diversity*

*contributing to the healthy growth of a single entity--a new 'science' spawned from the interweaving of western and Māori knowledge and values.*

Image reference:

Fleming, J., Longnecker, N., Salmon, R. & Hikuroa, D. C. H. (2020) Aotearoa New Zealand Participatory science and bicultural knowledge communication. In: T. Gasgoine, B. Schiele, J. Leach, M. Riedlinger, B. V. Lewenstein, L. Massarani & P. Broks (Eds.), *Communicating Science: A Global Perspective*(pp. 71 – 102). ANU Press.

## Point 2 – Changing Perceptions of the Public

As a science communicator, I was concerned when I first came to work at GNS that although the general public are acknowledged as 'end-users' of much of the research being conducted, they are not considered 'stakeholders'. I think this perspective is a fundamental flaw in the current RSI system as whole, as it results in public consultation and communication of research projects and their findings being neglected or, in many cases, not attempted.

The NZ public are very much stakeholders in the RSI system in NZ. At the most basic level, they decide through our voting system who gets to form our government in any given election cycle, which in turn has a direct impact on the amount and type of funding that is made available for different avenues of research. Te Ara Paerangi is concerned with determining how to choose projects to fund, and I think it is important to remember that where that funding comes from and how much is made available is ultimately—although indirectly—controlled by the NZ voting public. Therefore, it is in the RSI system's interest to pay more attention to how their work is perceived and understood by that public.

Modern technology is increasingly making the communication of information easier and faster, and the same holds true for misinformation. While Aotearoa New Zealand is fortunate to have a general public that—by international standards—retains a high degree of trust in science, the few who get left behind, or else led astray by misinformation, have significant potential to disrupt core societal functions and divert vital resources—as the recent 25-day long protest outside parliament palpably demonstrated.

This situation needs to be proactively addressed by the NZ RSI system, as a matter of urgency, so that we can ensure that society is on board, not only for ongoing changes to our lives and lifestyles necessitated by the COVID-19 pandemic, but for the many changes that will become increasingly necessary due to ongoing climate and environmental change. To do so, co-creation and co-design must become the standard procedure for project development, and where appropriate, include members of the public—or at the very least, members of impacted communities—in these processes. This is the only way to ensure that scientists understand the needs and values of their 'end users' and make sure their research is actually going to be useful to them.

## Point 3 – Prioritising Science Communication

Building on Point 2, it has become clear to me in recent years that the current RSI system has poor capacity for effective science communication not only by non-experts, but by policy makers, members of

impacted communities, the general public, or scientists and other experts working in adjacent fields. As scientific knowledge and research becomes increasingly specialised, the audiences to which formal academic papers are relevant and useful grow smaller, leaving increasingly large gaps in understanding in between. In the case of communicating findings to non-scientists, such voids are liable to become chasms that result in poor implementation of the outputs of scientific research.

I recall a presentation by a policy advisor for local council that I attended in 2020 in which the speaker related their enormous frustration at continuously being presented with data from scientists that invariably has the key information buried under layers of jargon and extraneous information. I was astonished, and concerned, that the only solutions they saw were to either train policy makers in science, or train scientists in communication for policy makers—both of which were discounted as viable options as both parties are typically already overworked just trying to do their own jobs.

I think experts on either side of such communication divides who are keen to participate in the cross-communication and engagement space should be given sufficient funding and resourcing to do so. However, the other option is to encourage CRI's and other institutions to hire dedicated science communicators whose sole job is to build bridges between scientists and their various audiences, so that there can be an efficient and effective transfer of information—both knowledge and values-- This is a situation that could be easily fixed making funding available for science communicators to heal the breach.

In either way, better communication between experts and non-experts in various fields would contribute to better collaboration between institutions, and better access to information by those who may be impacted by the findings of any particular piece of research.

#### Point 4 – Additional Criteria for Project Funding: Better Budgets

In my capacity as a science communicator I have been directly involved or interacted with researchers in a range of research projects, from treatments for shoulder pain to communicating volcanic risk. Time and again I have found myself having the same conversations, where I can see a project has significant potential for highly engaging science and/or bicultural communication outputs, but have not set aside adequate (or any) funding to properly reimburse those who could ensure such outputs are appropriate and effective. In this respect I speak not only of science communicators, but also our notoriously overworked Māori culture and language advisors. Without sufficient funding, such experts are often relied upon to commit hours of their own unpaid time to see that project outputs are culturally and situationally appropriate, or else are not consulted at all. In the latter case, researchers wishing to produce outreach or other materials accessible to non-experts are left to fend for themselves, resulting in outputs in the communication space that may not be appropriate, effective or an efficient use of resources.

As such, my recommendation is that all projects being considered for funding should be required to include the two following dedicated lines within their project budgets:

- one to provide for adequate compensation to Māori culture and language advisors; this would ensure that all projects include some consideration and incorporation of Te Ao Māori, and

- one to provide the necessary support to project scientists who may be keen to engage in the outreach and communication space, or else funds to hire one or more science communicators to do this for them; this will help ensure that not-technical communication materials are fit-for purpose and of most use to their stakeholders and other target audiences.

## Point 5 – Prioritising Proper Project Management

A key goal of Te Ara Paerangi is to break down the barriers that are inhibiting collaboration between researchers and institutions. While I agree that the competitive culture and framework for allocating funds is a large part of this, and support a restructuring of this process, I think better communication within projects that are collaborating would also help. This would enable researchers and their collaborators to build more productive partnerships that they are more likely to draw upon or nurture in the future, as well as address inefficiencies and inconsistencies in the spending of funds within projects.

For example, seemingly small-scale disagreements between scientists and technicians about how, where and what to install to monitor a particular phenomenon ought to be expected, but if not identified until scientists, technicians and contractors are already out on deployment in the field, result in wasted time and money, potentially substandard or compromised data, loss of professional credibility and long-lasting damage to professional relationships that may inhibit further or future collaboration. As such, I think that all projects vying for funding must be required to nominate a capable project manager whose job is to not only ensure that their project is conducted on time and on budget, but also to ensure that lines of communication are kept open and used by all contributors, so that everyone has the opportunity to develop the necessary respect for each other's differing expertise, and an understanding of their unique values and working constraints. Such a simple measure would surely ensure that projects are conducted and completed more efficiently and effectively, to the benefit of all.