

MBIE TE ARA PAERANGI – FUTURE PATHWAYS

Response from the Indigenous Genomics Institute (IGI)

Lisa Warbrick (MBA) *Ngāti Awa, Ngāti Rangitīhi, Te Ati Haunui a Pāparangi*
Dr Karaitiana Taiuru *Ngāi Tahu, Ngāti Kahungunu, Ngāti Rārua, Tūwharetoa*
Professor Taiarahia Black *Ngāi Tūhoe, Te Whānau a Apanui, Ngāti Tūwharetoa*
Dr Alana Alexander *Ngāpuhi: Te Hikutu, Pākehā*
Hare Rua *Tūhoe*
Aroha Mead *Ngāti Awa, Ngāti Porou*

KUPU WHAKAMIHI

Me whakamihi ki ngā pukenga nui o tātau te whānau o Indigenous Genomics Institute e au titiro kaha ai tātau ki tā te Māori whakarangatira tōna ao e pā kaha ana ki ngā kaiārahi, hāngai pū ki te *pū ia tangata (genomics)*. He reo kōrero tātau mo o tātau whānau, hapū, iwi, marae – kāinga au titiro whakamua kia aro tātau te Māori ki te pū ia tangata (genomics) ka whakakāhahu me Te Reo me ōna Tikanga.

KO WAI MĀTOU?

The Indigenous Genomics Institute (IGI) (currently an LLC in the process of transferring to a charitable trust) began coalescing in 2020 in recognition that a gap existed in the RSI ecosystem in “for Māori, by Māori” guidance and leadership around genomics. We aim to be a resource and a voice for Māori communities, hapū, and iwi when it comes to educating whānau about genomics, empowering them to utilise genomics for their own kaupapa, and engaging with genomics researchers.

COMMENTS ON THE PREMISE OF THE REVIEW

The MBIE Te Ara Paerangi review asserts that the aim is “a connected, resilient and adaptable modern system”. Māori have a very different view of the progression of time than traditional Western thinking, as embodied in variations of the whakataukī, *titiro whakamuri, kōkiri whakamua*. We hope that the aim of ‘modernity’ does not preclude incorporating lessons from how our tūpuna organised and experienced knowledge, and imparted it in local wānanga, and that the net has been cast wide, outside participants within the ‘old school RSI ecosystem’ in order to include these diverse perspectives.

We also note that while some of us (particularly those of us already ‘baked in’ to the existing RSI ecosystem) have financial support to contribute to this discussion through the ‘service’ requirement of our mahi, many voices that would be valuable in this discussion are not resourced in the same way. The lack of acknowledgement of the time, ideas, and cultural expertise of these potential participants is at odds with central tenets of Te Ao Māori, namely *take-utu-ea*. We often talk about the ‘leaky pipeline’ of talent loss within the RSI sector, and the soft (and hard) barriers that lead to this. A similar perspective, perhaps, should be taken to considering what voices have *not* been heard in these green paper conversations, due to the barriers of funding and time that local community members might face, reducing their ability to engage.

The other assumption in the introduction to the green paper is that the “research, science and innovation sector has served Aotearoa New Zealand exceptionally well.”

We think it is not unfair, nor unkind, to say, “some of Aotearoa” given the persistently stubborn signs of inequity and resistance to Te Ao Māori within the RSI system (McAllister, Kidman, et al., 2019; McAllister, Kokaua, et al., 2020; McAllister, Naepi, et al., 2020; Naepi et al., 2019; Stewart, 2021). Although some of these inequities are acknowledged in the green paper, the focus on the overall “exceptional” status of the RSI system suggests that perhaps the experiences of Māori are not being given their due weight. It is therefore clear that slapping a band-aid on the current system is not going to be adequate and the development of novel pathways provisioned by Māori-specific funding to support Māori-led research driven by the wants and aspirations of local Māori communities is required.

COMMENTS ON THE STRUCTURE OF OUR RESPONSE

Although the green paper is structured with a number of “guide questions”, our response is more free flowing, with some of our ideas grouped under headings that do not directly align to the guide questions. This is because, in line with Te Ao Māori, the solutions to some of these issues cut across multiple of the provided questions.

INCREASING NUMBERS OF MĀORI ENTERING THE RSI SECTOR AS RESEARCHERS

We must grow the researchers we want in our RSI ecosystem. This means equitably investing in education and infrastructure (e.g. internet, chrome books for pupils) in all areas of the country to support our youth with interests that they may have in RSI, including ensuring training in RSI-relevant curricula in Māori-medium Kura. Issues of representation of Māori within the RSI workforce cannot be viewed in isolation of underfunding of educational resources/infrastructure, particularly in areas where Māori make up a larger proportion of the population (i.e. Te Tai Tokerau, Te Tairāwhiti).

The development of regional hubs of research proposed in the green paper would be a powerful way to uplift local mātauranga, ensure research is both relevant to local communities and led/co-led by them, and to ensure that Māori researchers do not have to make a choice between remaining close to their whānau and engaging in the RSI system. A potential model for this could be the “extension office” system associated with universities in the USA. Interchange between such hubs and other RSI institutions could be facilitated through dedicated sabbaticals to develop relationships across the RSI sector and with Māori communities, ensuring researchers within the RSI sector have an understanding of aspirations and concerns of Māori communities.

However, having Māori distributed throughout the ‘big RSI players’ (i.e. universities, CRIs) in a re-imagined RSI system is also a powerful check in ensuring decisions are not made about us, without us, and that the RSI workforce reflects the demographics of society at large. One effective mechanism for ensuring the health workforce reflects the faces of those in Aotearoa has been the [‘Mirror on Society’](#) pipeline at the University of Otago. We propose a ‘Mirror on Society’ type policy, but for the RSI sector, with funding to support young Māori researchers. Acknowledging the collective nature of Māori society, there would be an explicit role for Māori communities to identify young folks from their community who would thrive in an RSI setting. They would go to university, and potentially to graduate school depending on

their interests, supported on a scholarship. They would then be “bonded back” to their community with associated funding, bringing the knowledge and connections they have formed back with them, potentially helping to support the regional hubs of research described above. A [similar approach](#) has been used to reduce educational inequity in New Zealand, and the ‘home residency requirement’ has been recognised by international programs such as Fulbright as important for information and cultural exchange. In the process of increasing Māori participation in the RSI sector, the RSI sector is also enriched by experiencing the perspectives of these young researchers and the Māori communities they represent.

There is no trouble getting scholars into mātauranga-centering institutes within higher education. Therefore, our lack of Māori scholars in other RSI fields represents a failure from harakeke roots level to weave these careers with Te Ao Māori. Education and integration between the NZ education system, downstream careers, and local communities is key.

RETAINING MĀORI ENTERING THE RSI SECTOR AS RESEARCHERS

It can be a lonely experience being Māori within the RSI sector. When Māori are under-represented, they are more likely to (a) experience “unsafe” workspaces e.g. they may witness colleagues being disrespectful in their attitudes towards working with Māori communities or may experience disparaging remarks about “Māori stuff” and (b) be overworked due to their ‘dual role’ (as acknowledged within the green paper). One solution is to ensure cohort hires. For departments/institutions without Māori, the emphasis should be on hiring multiple Māori researchers in cohort hires to ensure a strong peer-to-peer support network.

In addition, the RSI sector could be doing a far better job upskilling Tangata Te Tiriti researchers, so that the burden of educating (including in situations when power dynamics may make this very difficult) does not fall solely on Māori researchers. A minimum level of competency for all researchers in the RSI sector around appropriate Tikanga, New Zealand history, and respectful engagement with Māori communities is necessary to increase the comfort/safety of Māori communities who interact with these researchers, and of Māori researchers within the system. RSI institutions should implement performance assessment and hiring practices that includes prioritizing competency in these areas and facilitate the necessary training to ensure staff can increase their competency.

An additional issue of promotion and progression within the RSI system, is whether the “outputs” of Māori researchers are valued, and whether the researchers feel like they have the freedom to pursue research of interest to them and their communities. If the reimagining of ‘research priorities’ proposed by the green paper explicitly includes Māori aspirations, then this may address the issue of Māori researchers feeling like they belong within the RSI system. Adequately and fairly assessing the outputs of Māori researchers, however, will require some changes. For example, although there are some great examples in the published literature of the intersection of mātauranga and the current RSI system (for example Clapcott et al., 2018; McAllister et al., 2019; Mercier & Jackson, 2019; Wehi et al., 2019), publications are not the right ‘currency’ to measure benefits accruing to local communities from their interactions with RSI. This results in researchers who work with communities in this manner being systematically devalued under traditional metrics of academic success

(e.g. number of publications, H-index etc). This may be able to be solved by listening to Māori communities who work with RSI researchers about their perception of the impact of the research, however, the larger point is that *how* research impact is defined is important and it should not be defined solely in economic and scientific outputs.

Māori on average have families when they are younger (Stats NZ, 2019), and currently, no paid parental support is offered to students who wish to start families (McAllister et al., 2021). This, and inadequate levels of parental support for workers within universities (McAllister et al., 2021) appears to contribute to knock-on impacts in underrepresentation of women at more senior levels, likely compounded for wāhine Māori (Walker et al., 2020). Instead of forcing women to choose between whānau and training within the RSI sector, parental leave should be remedied to an internationally acceptable level, including extending this to students. In addition, although the extension of eligibility following childbirth (and/or other reasons for taking time away from work) for Marsden and Rutherford funding is excellent, potentially this grace period should also be extended to graduate students who have a child during their degree. In addition to parental support, creating environments where people feel free to bring their babies and children to work (within reason – obviously not in dangerous lab areas!) would hew more closely to values held within Te Ao Māori.

One additional problem is that under the current RSI system, funding targeted at individual researchers (e.g. Marsden, Rutherford) is largely contingent on an institution agreeing to host the individual if they are successful in obtaining funds. Because neither of these awards can cover full salary (Marsden Fast-Starts at current funding are too limited to fund a FTE=1.0 postdoc with overheads) and/or overheads (Rutherford postdoc/discovery fellowship), the researcher/institution needs to (a) cover the shortfall in salary (e.g. through teaching contracts, other grants etc) and/or (b) accept a “loss on the books” of overhead. This has led to some Māori researchers being blocked by their current institution from applying for these grants: another lever removing Māori from the pipeline.

WHAT IS MISSING FROM THE RSI SYSTEM IS NOT JUST MĀTAURANGA, IT IS TIKANGA

Unless significant changes are made, any Māori researchers retained in the RSI system will face similar challenges to researchers currently within the system, namely that manaakitanga and kaitiakitanga are not embedded in the system. The RSI sector currently trains too many PhD students for research jobs that do not exist. Although this makes for a 'productive' research landscape from the perspective that talent is always available, it is brutal and demoralizing to individuals who end up under-employed for the training that they have. Even for those who graduate and manage to secure a job in the RSI sector, the precarity of employment is soul destroying. It delays people from being able to buy homes, start families, and save for retirement. It stops them being able to put roots down, because it is likely with the end of each contract, they will have to move locations. In whatever new form the RSI sector takes, valuing people and their lives needs to be at the centre of it.

INCREASING MĀORI COMMUNITY PARTICIPATION IN THE RSI SECTOR

There are two major roles in the RSI sector: the person/people who ask the questions, and person/people who answer the questions (credit to Willy-John Martin for this concept from one of the MBIE hui). Before Europeans arrived in Aotearoa, Māori carried out both of these roles through wānanga and the development of mātauranga. However, following colonisation, the asking/answering roles have both been concentrated in TEOs, CRIs and other RSI structures of the crown. This is disempowering, and any reimagining of the RSI system needs to re-balance this, to make sure the questions getting asked in the RSI system reflect questions important to Māori communities.

Addressing this will require dedicated funding to support research originating out of Māori communities, including base-grant funding if that is the model that is adopted for the rest of the RSI ecosystem. Currently, many funding streams are difficult to navigate and take a large amount of time to apply for. While institutional support for developing these grant applications is available in many current RSI institutes, local communities are not likely to be as specialised or resourced for submitting grant applications. The process of applying for funding needs to be simple and streamlined enough that is not overly onerous for communities.

Researcher-driven questions are likely to continue under a revised RSI system. It is important to note that current funding schemes – particularly for early career researchers who have not had time to previously establish relationships with Māori communities – do not align with the time necessary to build adequate relationships with local communities. In addition, communities are not funded for the time they spend engaging with researchers, unless researchers build this into their grants. A re-imagined RSI sector needs a code of ethics/funding/time for these interactions, to ensure communities are not bearing the cost of “consultation”. In addition, mechanisms for communities to ‘enter’ into existing platforms of research (e.g. the NSCs, the CoREs, Genomics Aotearoa etc) need to be made more clear.

Finally, Māori communities should be considered in any discussion of research infrastructure in Aotearoa. Currently, access to research infrastructure being restricted to institutions within the RSI sector bakes in inequities e.g. until Māori are as equally represented in computationally-heavy disciplines as Tangata Te Tiriti, the number of users of infrastructure, such as NeSI, will not be equitable. How can this be addressed so that communities can be empowered to access and utilise these resources themselves, rather than having to be incorporated in an institute? Could attempts to mitigate these inequities take the form of addressing long-acknowledged substandard infrastructure (i.e. internet) in areas where a large proportion of the population is Māori?

HOW MĀTAURANGA, TE REO, TIKANGA AND OTHER TAONGA IS PROTECTED AND UPLIFTED

Embedding Te Tiriti in a reimagined RSI system will require greater protection for the various taonga of Māori of interest to the RSI system, including taonga species, their data, and mātauranga. There have been relatively recent examples where taonga species have had their genomes sequenced, and the data has been placed on overseas data repositories, extinguishing any rights to benefits under Te Tiriti. When a conversation with free, prior, and informed consent (FPIC; “United Nations Declaration on the Rights of Indigenous Peoples,” 2007) for uploading data offshore

occurs with local communities in language that is “reMāorified”/Indigenised (“reMāorification”, a term coined by Moana Jackson: Cairns, 2020) so that Māori communities thoroughly understand the risks, and they exercise their tino rangatiratanga to make a decision to upload the data offshore, kei te pai. However, in many of these cases, such conversations are not documented in the methods, nor are the Māori communities with kaitiakitanga responsibilities for the samples mentioned in the acknowledgements, suggesting these conversations have not taken place. Museums seem to be particularly represented in “overseas lending” practices, which allows colonisation to cut twice – once when the samples were taken historically without consulting with kaitiaki, and again when this lack of engagement cuts once more. Full, prior and informed consent as a model would facilitate the “reMāorification” of science, assisting Tikanga experts working with scientists.

All research with Māori communities should be compliant with the concerns raised in WAI262 and any re-imagining of the RSI sector needs to include the ability for Māori communities to have sovereignty over data collected from within their takiwā/rohe. Despite institutions having over two decades since WAI262 to implement responsiveness to Māori and mātauranga within institutional policy, some seem resistant to change. One way to incentivize change would be to provision public funds only to institutions that have a comprehensive policy on Te Tiriti and Māori responsiveness i.e., institutions that have signalled that they are ready to move forward working constructively with whānau, hapū, and iwi Māori, and have all the policies and practices in place to do this in a mutually beneficial way.

Furthermore, Tikanga experts should be involved in discussions of data repositories to ensure data is stored safely (e.g. considerations about where the data of the dead are stored relative to that of the living), as well as appropriate protocols (e.g. karakia) being implemented when data is collected/samples taken. In addition, education is again key, to ensure that RSI practitioners are aware of their obligations to taonga under WAI262, and to ensure that any work with Māori communities does not rely on extractive use of mātauranga. In addition, an RSI system that funds “non-traditional outputs” related to mātauranga, and the safe guarding of mātauranga is important (e.g. it may not be appropriate for mātauranga to be recorded, but instead passed down to the next kaitiaki of this knowledge). In short, there are strong opportunities for New Zealand to lead the world in data collection/management/storage protocols that enshrine the values and priorities of Indigenous Peoples.

The role for Te Reo Māori and Tikanga Māori in a newly envisioned RSI system has not yet been adequately signalled within the green paper, discussed in greater detail in the following paragraphs. This is despite the strong projections of Te Reo Māori and Tikanga through research conducted at Kura Kaupapa and PhD theses presented at wānanga. In Te Reo Māori immersion spaces from Kōhanga Reo all the way through to Wānanga and Whare Wānanga, Te Reo Māori and Tikanga are at the heart of research through the act of heritage deliberation, discussion, cooperation, and the dissemination of knowledge. The underpinning Te Reo and Tikanga Māori facilitate active and rich collaboration, participatory learning, and sharing. While we identify the gap in acknowledgement of Te Reo and Tikanga within the green paper, we also emphasize that ensuring academic research integrity

when it comes to researching Te Reo Māori and Tikanga Māori should also be of the highest priority.

He tūkinu (appalling), there is no reference, no recognition, no alignment with Te Reo and Tikanga in the RSI MBIE Green document as we look directly to 21st century Te Tiriti o Waitangi-led compliance and citizenship. For whānau whānui, hapū, iwi, marae, across the motu; immersion Kōhanga Reo, Kura Kaupapa, Wharekura, Whare Wānanga Māori, tertiary education; the very foundation upon which Te Reo and Tikanga led experience, heritage, knowledge and scholarship connectivity exist; teaching programmes are informed by research and scholarship in Te Ao Māori. The valuable platform of Māori and genomics can be added to this foundation. In all disciplines across immersion Te Reo and Tikanga the application of enriched case studies and exemplars are drawn from strengthening the links to Māori world view epistemology, Māori genomics is central to this and is inculcated within in Te Reo and Tikanga.

Māori world view epistemology is premised on sustaining an environment which focuses on Te Reo and Tikanga excellence, Te Reo and Tikanga academic leadership, Te Reo and Tikanga engagement. This in turn creates collaboration with other research and teaching entities and institutions to nurture and build sustainable Māori world view centres of excellence, one of those centres of excellence is Māori genomics. Māori world view centres of excellence is about defining areas of broader environment, people and research specialisation connectivity. It is this specialisation that will lead to new Te Reo and Tikanga knowledge – sharing capabilities to evolve new paradigms for Te Ao Māori genomics research nexus to promote a wider engagement Te Reo and Tikanga, and pūtaiao scholarship from the perspective of Māori. With this in mind it is our intention to focus on contributing to Māori world view endeavours in which our major strengths in Te Reo and Tikanga can contribute to the obligations and responsibilities of social, economic, Māori world view, science and cultural journeys of knowledge acquisition into Māori genomics.

Fostering Te Reo and Tikanga research excellence require engagement with and planning for the future to recognise responsibility – obligations to shifting priorities, investment in Te Reo and Tikanga pūtaiao research and its translation to cultural intellectual capital genomics i.e. relevance.

The key priority is to sustain an environment where Te Ao Māori world view priorities with the determination of Reo and Tikanga aspirations thrive. The vitality and wellbeing of all people and the environment in order to give full expression to the eminence of Te Tiriti Waitangi must be about supporting and building, strengthening to nurture and recruit more Te Reo and Tikanga scholars in the specialist field of Māori genomics to foster intellectual creativity and Te Reo and Tikanga academic innovation.

BY MĀORI, FOR MĀORI

In the Ministers' foreword, the green paper states that “we saw the best of our research system through the support it provided to the country during the COVID-19 pandemic.” While this might be true in general, systematic failures have been identified in the extent to which the government honoured Te Tiriti in its response to COVID (WAI2575, 2021). Despite the alarm being sounded by Māori leaders and

service providers, this advice appeared to be ignored, leading to disproportionate death among Māori from COVID-19 (Megget, 2022). While this might serve as an extreme example, it shows the current reluctance of the crown to respect Māori knowledge structures and expertise e.g. a “seat at the table” is not enough, if decision makers are not prioritising Māori needs and aspirations.

A solution is to embed Māori as ‘decision makers’ in the newly realised RSI system, including Māori-specific funding streams administered by Māori, for Māori, to the benefit of Māori communities. It is also important to note that embedding Māori within organisational management is key. Some of us have experience working with organisations that have Māori-specific ‘oversight’ of research proposals (i.e. a kāhui, or reviewers of Vision Mātauranga), yet intermediate operational decisions can stymie the ability of Māori-relevant research to even reach these final reviews. These points (“by Māori, for Māori” and embedding Māori as decision makers) are important to consider across the questions asked throughout the green paper. For example, Māori should set national research priorities, Māori should decide what core functions are, and Māori should choose “performance metrics”. Māori should be present in management structures of all research organisations with real power to influence decisions (and not just as a ‘token’ gesture of diversity), there should be Māori researchers doing the work, Māori should explicitly benefit from research, and Māori should be the ones who assess the impact of this benefit. While this can (and should) be achieved within current institutions, Māori-led entities (e.g. whānau, hapū, iwi, the aforementioned regional hubs) should also be provided the funding and freedom to succeed under these terms as well.

A RŌHI BY ANY OTHER NAME?

We note that even just relatively recently (in 2015), the ‘Endeavour’ fund was created, administered through MBIE. In addition, The Royal Society Te Apārangi administers a “James Cook Research Fellowship”. We hope it can be appreciated that Māori may have mixed feelings about applying for such fellowships, given through their naming, they privilege an English explorer’s name and the name of his ship (and contact with a civilisation that had negative impacts on Māori), over the many Māori tūpuna and their waka who had arrived centuries before. In fact, although we acknowledge that due to colonisation many Māori do not have Te Reo Māori names, only 2 of the 23 funding opportunities advertised by the Royal Society Te Apārangi have Te Reo Māori names. It may seem like a relatively small thing, but a key tenet of Te Ao Māori is that names have power. The names we chose for awards and funding opportunities should reflect this power, as well as the diversity we want to see among the work force. Our built environments also reflect this issue. Many buildings/structures throughout the RSI system could be from anywhere in the Northern Hemisphere: it is hard to see a visual representation of Te Ao Māori within the current RSI sector. Weaving Te Ao Māori into the RSI sector in a holistic manner – the way that Te Ao Māori functions – will nurture the uniqueness and strength of RSI in Aotearoa.

CONCLUSION

We hope that our thoughts here can help in some small way with the ultimate (and admirable!) goal of the green paper: to “embed Te Tiriti across the design and delivery attributes of the system, and enable opportunities for mātauranga Māori.” Any of us listed on this document are happy to communicate more about any of

these ideas. Finally, he nui te mihi ki ngā kaimahi e kohikohia ai ngā kaupapa katoa kia whakapai te RSI system.

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