



Submission on the Policy Framework Discussion on Bioprospecting

SCION

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On behalf of Scion

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Introduction

Scion, a Crown Research Institute, acknowledges there are many ways to view the world and the role of science. We welcome the opportunity to comment on a policy framework for bioprospecting in New Zealand.

In defining any policy there is an underlying assumption that there is a monetary or non-monetary value associated with the exploitation of fauna and flora. We wish to invoke a policy based on the philosophy that the benefits of any exploitation should be shared through the chain of knowledge as well as the chain of ownership. This philosophy accounts for rewarding the various sources that may contribute knowledge that result in commercialisation (e.g. through western science or Mātauranga Māori), while providing benefit for those who can be ascribed ownership (e.g. landowners, access providers, private collectors, Māori). Furthermore, any policy framework should be inclusive of New Zealand's flora and fauna that is either currently within the economic bounds of New Zealand, or in the case of material that may have already left New Zealand, have provenance here.

In considering our response, Scion science and Māori Strategy staff have consulted with representatives of Te Arawa to start to understand the historical activities and future aspirations of Te Arawa relating to bioprospecting. Scion understands that Mātauranga Māori comprises a holistic view incorporating the spiritual realm, the genealogy of life forms as well as practical knowledge around uses for these life forms in daily life. This three-fold interpretation of Mātauranga is important because often Māori think and talk from one or all three of these perspectives whereas non Māori assume Mātauranga only relates to the practical element. Science often separates things into components and identifies aspects that can result in commercial gain. Although in some instances, science can also take a holistic view, by recognising the interrelatedness of everything and integrating pieces back into a whole.

We believe that there should be a meeting of viewpoints and that the current discussion on Bioprospecting can be at the heart of such a meeting. We address specific issues raised in the Policy document in this submission.

Question 1. On New Zealand's biological resources:

We believe there should be good knowledge on bioprospecting activities in NZ. This is in order to ensure benefit is shared fairly amongst those who contributed to the realisation of value. Another dimension is that centralised knowledge on bioprospecting activities is valuable and could be made available to other interested New Zealanders. Note our comment on definition of bioprospecting (Question 3).

Our experience in costs/benefits/outcomes is not available as we have not approached our current or past activities in such a framework.

Question 2. On New Zealand's current frameworks to access biological resources:

Coordination can only be beneficial. NZ is a small country with a small population and this is often forgotten when comparing to overseas situations. The suggestion (Pg 39) to adapt and align the existing Central Government access systems (i.e. registers held by DOC, MAF, MFAT and LINZ) into a Bioprospecting Policy Framework

would also centralise this information. Scion understands that Māori also aspire to a role of significance in coordinating this knowledge. In the interests of meeting Treaty objectives, the incorporation of this into the bioprospecting policy would benefit our relationship.

Comprehensive should not, however, translate into a bureaucracy of data, and remain simple. Managing bioprospecting as an overarching activity is equivalent to managing it as a small multinational company so should not be difficult.

Question 3. On a comprehensive bioprospecting framework for NZ

Yes, we believe that New Zealand should have a comprehensive policy framework to manage bioprospecting activity in this country.

i) Potential policy benefits and costs: The submission document covers only some of the potential monetary and non-monetary benefits. We acknowledge that it was not the intention of the document to include issues around ownership however there are benefits that could, and should be ascribed to the owners or access providers. Clearly this is a complex issue and would need to be dealt with on a case-by-case basis if the benefits arising from exploitation are significant.

We have summarised our view of the complexity and inter-relationship of the various players in any “Chain of Ownership” (Originators, Owners and Guardians) and “Chain of Knowledge” (or Contributors) in a simplified diagram (Figure 1).

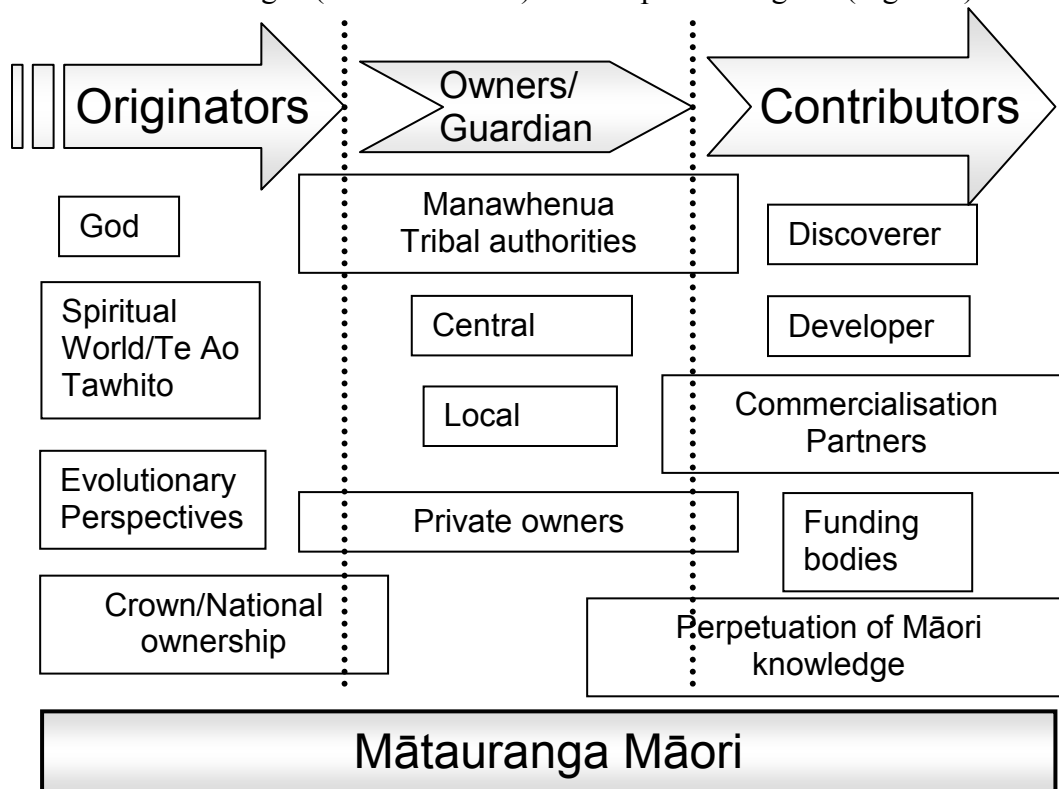


Figure 1: Complex inter-relationship between Chain of Ownership (Originators) and Chain of Knowledge (Contributors). The vertical fragmented lines represent the clustering of similar interested parties. In some cases boxes overlap more than one area. We interpret Mātauranga Māori as underpinning all of these areas.

The document briefly mentioned the costs of application and then compliance. Provisions could be made to group substantially similar applications/licences (to reduce cost). Consideration also needs to be given to how compliance will be mandated and audited. A useful example may be to review the governance of the HSNO Act by the Environmental Risk Management Authority and enforcement by MAF.

ii) Policy Scope

The Definition:

“Bioprospecting is the collection of biological material and the analysis of its material properties, or its molecular, biochemical or genetic content, for the purpose of developing a commercial product. Bioprospecting policy excludes the later steps in the chain of product development.”

This definition also excludes Bioprospecting for discovery without a specific commercial purpose behind it – i.e. for knowledge sake or curiosity, although a commercial opportunity might be possible from the results. This is very likely to cause confusion at the outset.

“In scope” and “out of scope” boundaries

The Bioprospecting policy scope currently only includes indigenous biological resources accessed through central government providers. We collectively agreed that the scope should be extended to include other access providers (e.g. local government, private, ex situ and non-indigenous) for both commercial and non-commercial application. [This is further addressed below].

There are some instances such as those already discussed on Pg 33 (e.g. collections for purposes other than research and analysis, food or firewood etc) where we would agree that these would be “out of scope”.

Non-commercial research activities: (Pg 30, 33, 34):

Because it is difficult to draw the line between what is commercial and non-commercial one solution might be to use a licensing or informed consent arrangement such as that of Canada (Pg 29), or that of the Andean communities (Pg 27). Licenses could be issued for non-commercial work, and later revised if commercialisation is pursued. A license could include definition of who an owner might be and filling in where benefits would go and the general principles of how that might happen. Such an activity should not be difficult to record in a centralised searchable database and NZ has several of these already. We do agree that overregulation can stifle activity so any licensing (or application process) should balance pragmatism against realism.

The policy may include any collection for discovery or teaching purposes (therefore with any IP issues and the process for dealing with them are dealt with before there may be any commercial possibilities). It would be very difficult to chase material and knowledge that becomes commercial if they have been out of scope initially, and if the material has left NZ. Again an initial license agreement in this instance would enable follow through many years later, if a commercial product eventuates.

Inclusion of private access providers:

A license can have a provision that covers issues with private access providers – e.g. a requirement to have agreement for access and a recording of that.

Ex situ collections:

NZ organisations also hold collections of non indigenous species, and NZ species are held in *ex situ* collections in many other countries. It would be interesting to know if there are any equal considerations being given to the external collections in any other country. Possible solutions could include a finite start date (e.g. inclusion of material collected from and including the year 2000), or that only the relevant contents of the *ex situ* collections (i.e. with provenance to New Zealand) fall within the bioprospecting policy.

Non indigenous biological material:

This is an interesting one and we note that other countries have either included this or not. As we have many escapes, and if we explore it further, then earlier escapes may well have become locally adapted, we believe it can become difficult to define what is or is not indigenous. In this instance we suggest inclusion of non indigenous material.

The separation of cultivated or not would include such instances as kumara (Mātauranga Māori associated but essentially imported for cultivation), and bioprospecting of NZ mutants of cultivated plants. Such instances as this become difficult to exclude. We do not have a solution, only note it is worth discussing.

iii) Administrative frameworks

A Competent National Authority:

The series of options are useful except for the last one of the suggested bullet points of conducting the entire process such as including managing negotiations between parties. Such an authority could be an issuer of licenses (and holder of the database of licenses), give guidance to the appropriate access provider and best practise concerning Mātauranga Māori or traditional knowledge and practises, and on request and separately assist in negotiations by providing a register of those able to assist in negotiations.

Question 4. On Mātauranga Māori and definitions of traditional knowledge:

Unfortunately the document's failure to offer a concise definition of Mātauranga Māori as a starting point for discussion has, in our view, thwarted the good intention of parties to fully discuss the issues. In absence of a definition, Scion has based its interpretation of Mātauranga Māori on how it has been described by Te Arawa and from definitions researched elsewhere^{1,2}. Mātauranga Māori encompasses a holistic view incorporating the knowledge, comprehension and understanding of everything visible and invisible in the spiritual realm, then at genealogical level and finally practical knowledge around use of and interactions with life forms in a day-to-day manner. This three-fold interpretation of Mātauranga has been stylised in a diagram below (Figure 2). It reflects the dynamic and evolving nature of Mātauranga Māori. This also

1: FRST Investment signals for the Te Tipu o te Wānanga (TTW)

2: C. Mohi 'Mātauranga Māori – A National resource, prepared for MRST 1993 pp 1-3

encompasses the view that Mātauranga Māori knowledge arises from, is based in or contributes to the distinct culture, identity and collective experience of Māori.

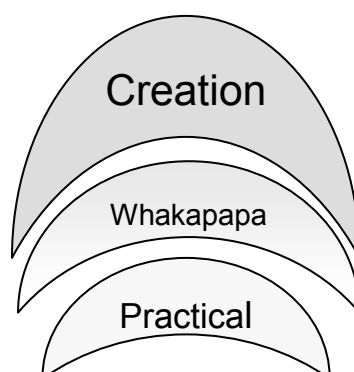


Figure 2. Diagram depicting the three realms of Mātauranga Māori knowledge.

Options to protect Mātauranga Māori

We agree it would be desirable for New Zealand's bioprospecting policy to protect both the biological resources as well as the associated knowledge held by Māori.

Further to the suggestion of a centralised licensing system – this could include best practise guidelines for dealing with Mātauranga Māori issues as well as agreeing to benefit sharing between the bioprospector and the traditional knowledge holder (in a similar way to the Australian regulations).

We note whatever solution occurs, it should not take a lot of time, procedure and cost (especially if a license is for exploration or use without a specific commercial goal) otherwise application for licenses will be avoided, which may result in biopiracy.

Question 5. On international bioprospecting frameworks

We felt there were attributes of some of the International bioprospecting frameworks outlined. For example for the Andean Communities, the requirement for bioprospectors to obtain prior informed consent of, and share benefits with, both the National Authority as well as the indigenous and local communities was a good working model. This policy includes non-indigenous as well as those found in their country due to natural migration and did not distinguish between commercial and non-commercial.

We also thought the licensing of scientific research under the Scientists Act in Canada took a pragmatic approach to capture the required information.

Question 6. On any other issues

We re-iterate the complex nature of the issue of ownership and how to fairly allocate appropriate reciprocity of any benefits to access providers or owners. For this we go back to the philosophy that bioprospecting activities are only permitted to proceed if the bioprospector has defined a process for how to address this, if monetary and non-monetary benefits arise from the exploitation of NZ's fauna and flora.

We also acknowledge that in some cases, (particularly for very common plants or microorganisms - e.g. grasses or *E. coli*) where ownership will not be able to be ascribed. There may be instances where there may be no known, or living indigenous peoples (e.g. Antarctica) or the people may be nomadic.

We realise that it will be difficult to retrospectively protect past escapes but acknowledge that New Zealand has also benefited from developing knowledge from species sourced elsewhere (e.g. kiwifruit).