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UNIVERSITY OF CANTERBURY

BIOPROSPECTING POLICY

Response to the Discussion Paper from the Ministry of Economic Development

Introduction

The University of Canterbury is a research led institution and welcomes the development of policy positions that will enable research to be conducted across a wide range of topics. We have long recognised that knowledge about New Zealand's biological resources is fundamental to our economic, environmental, social and cultural advancement. We live in a part of the world that is unique in its evolutionary history, its very recent human impacts, its association with indigenous peoples and its approach to innovation. The key issue is can we capitalise on advancements in the knowledge base about our biota yet retain the benefits for all?

Bioprospecting is often touted as being the base for a new economic bonanza but the reality is that few new 'wonder drugs' or new foods arise from such activities. More likely is that by studying functional processes and biological activity we can gain new understanding of potential targets and processes that may guide future discovery options. The road to riches from bioprospecting as a primary endeavour is fraught with many pitfalls and 'go/no go' points

However, we need an effective framework to conduct research, protect relevant IP and ensure a flow of information back to the communities where the biological resources come from. If we are to gain from overseas and private sector investment in bioprospecting, we need a transparent and defensible policy. If there is any uncertainty over ownership, IP access, future use etc, investors will move to places with greater certainty. While we can claim some degree of uniqueness, it will not overcome risks from uncertainty.

We have had a long history at the University of research into biological activities especially from marine organisms. This has led to several products going forward into advanced screening trials for medical purposes. However, the market and capital base for investing in advanced screening is very limited in New Zealand so most potential products are then passed to multinational companies for further evaluation. While agreements are signed for future royalties, the reality is that these are relatively small. The key benefit comes from research funding that flows to the key research groups. For example, some \$4.5 million has flowed over 20 years into the natural product research group in the Department of Chemistry at the University of Canterbury from overseas companies.

Specific responses

1. *Biological resources:* There is no systematic focal point for knowledge about bioprospecting activities in NZ. If a landowner, iwi, local government entity etc is approached by a researcher or company, there are few resources to access to find examples of effective approaches. Some simple flow diagrams on possible options and review points might be valuable.

Biological activity is based on a species. This can become the basis for protection and subsequent knowledge transfer. If we know that a species is endemic to the country or region, we then have the basis for any levels of protection we may wish to impose. Taxonomy is, therefore, a fundamental cornerstone of any bioprospecting framework. 'If we do not know what it is then how can we protect it?'

However, we are limited by declining taxonomic skills so we will need to utilise protection mechanisms that are based on new technologies such as DNA fingerprinting and 'barcodes'. Smart databasing with the ability to protect certain data fields will give some element of transparency on current projects and target species while protecting key IP. At the same time we need to reinvigorate the development of future taxonomic skills as these are becoming increasingly 'endangered both nationally and on a global scale.

This means that any system that may promote better access and benefit sharing should have a foundation in a publicly accessible database especially if public funds have been utilised in the core identification and discovery phase. The data resident in the database are of sufficient quality to face international verification as to names, authorities, location etc. More private and commercially sensitive information can be kept confidential in closed data fields. One of the key motivators for many landowners, rohe, iwi etc to become involved in bioprospecting is to gain information in the biological resources on their land. The prospect of great wealth is tenuous at best.

2. *Current frameworks:* It would be generous to give credit to current approaches as being a 'framework'. When approached by overseas companies it is hard to point to a pathway that will give some degree of certainty to their potential interests. The Discussion Paper pointed out some differences as to the source of biological materials but skirted around the implications for any framework based on endemism rather than individual property rights. Right now there would appear to be very few restrictions on the ability of a company to form a relationship with a landowner to take, for example, biological samples from privately owned native forests. By contrast any sampling of biota from Department of Conservation land would be rigorously controlled through the permit and concession processes.

Since the effect of taking small samples is unlikely to be noticed, it would be very presumptive to imply that the RMA would be invoked. There are also no export controls on taking small samples of biological material out of the country and any

robust enforcement of any such controls may restrict legitimate research collaborations.

3. *Future frameworks:* For the reasons of giving some certainty to potential researchers, investors and landowners, a clear framework is necessary. However, it should not be unduly restrictive. It needs to be pragmatic and recognise the potential for IP returns. The primary benefit for NZ to capture is the information on our biota and ensure that data are made available while recognising the need to protect sensitive data fields. This can now be done. Any agreement needs to require that IP issues will be agreed to before any commercialisation takes place so we cannot divorce pure investigator-led research from protection against misuse.

The framework should give a 'best practice' pathway so that any organisation will know the challenges, pitfalls and opportunities so some form of National Focal point is desirable. However, a strong bureaucratic approach should be avoided if possible. We want processes that will enable good research to take place yet provide some layers of IP protection.

The difficulty in defining an effective response in this area reflects the complexity of the issues. It is far better that we begin with a simple framework and add complexity as we go. If we wait for all the issues to be resolved to everyone's satisfaction, we will lose opportunities for potential benefits to other countries with a more liberal approach.

4. *Matauranga Maori:* We have some unique responsibilities with respect to indigenous knowledge but also some unique opportunities to illustrate to other countries just how traditional knowledge can be managed for benefit to key stakeholders. Again if wait for full resolution, key opportunities will have passed us by. An appropriate advisory body may be necessary to assist applicants through any framework while we 'learn by doing'.
5. *International frameworks:* This has been an issue that has been on the international agenda for some time and some countries have found ways to develop some operating frameworks. Access to this knowledge should be part of any NZ system. Costa Rica has been a leading example of an enlightened policy and through INBIO, 50% of all royalties earned by commercial bioprospecting and 10% of all in-country bioprospecting budgets go to the MfE equivalent for ongoing biodiversity conservation activities.

The National Cancer Institute in the US is also often cited as having 'best practice' guidelines for bioprospecting.

The Convention on Biological Diversity is a framework agreement covering many aspects of biodiversity and its sustainable use. Bioprospecting is very much about sustainable use and sharing of benefits. However, we cannot wait until the UN

processes wind towards any conclusion on access and benefit sharing as most resources will have been exploited before any universal agreement is possible. Again it is a case for NZ to develop a pragmatic approach that can be modified.

6. *Other issues:* We should not enter into bioprospecting agreements with the expectation of great riches. Instead we should recognise that a search for biological activity in our biota can enrich our knowledge base about our species and give a greater basis from which to grow our research capability. We should have a clear expectation that unless the information is commercially and/or culturally sensitive, it should be made available for wide use. It is this information that will add value to all with only relatively few cases delivering significant economic benefits.

Conclusion

The University of Canterbury supports the development of a pragmatic and enabling bioprospecting policy. We are firmly of the view that it must not unduly restrict legitimate research and it must guide the development of best practice IP regimes. There must also be regular review processes in place to ensure that we learn from others and also our own approaches. On issues such as traditional knowledge we can lead the world in finding innovative approaches.

Professor David Penman
College of Science
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