

## **Bioprospecting: Harnessing Benefits for New Zealand**

### *Nautilus Minerals' Response to Discussion Document*

Nautilus Minerals is the world leader in the commercial exploration and sustainable development of seafloor resources. To date, the Company's activities have focused on high grade gold, copper, zinc, silver and lead seafloor massive sulphide deposits (SMS) in the territorial waters of Papua New Guinea (PNG).

Nautilus has extensive experience sampling biological material from deep sea environments, particularly around hydrothermal vents. In 2007, for example, Nautilus launched the world's largest commercial exploration and development program for SMS deposits at a cost of US\$26 million in the waters of PNG. The program involved 184 days aboard the 141 meter "Wave Mercury", and during the environmental phase Nautilus collected in excess of 550 biological, sediment and water samples, while logging over 8,000 sea floor observations.

Nautilus would like to offer the comments below to aid New Zealand draft its bioprospecting policy.

#### **Responses to questions outlined in the Discussion Document**

##### **Question 1) On New Zealand's biological resources**

A regulatory framework for bioprospecting in New Zealand should take into consideration the significant barriers to marine bioprospecting that make it inherently more risky than terrestrial bioprospecting. Such barriers include:

- a. Deep sea marine Bioprospecting involves significantly higher capital and operating costs compared to terrestrial bioprospecting. Not only is it more expensive to conduct exploration campaigns in the ocean, but accessing deep seabed environments that are extreme in terms of depth, pressure and temperature, as well as maintaining collected samples intact and alive *ex situ* requires sophisticated and expensive technologies. This is in addition to the large expenses typically associated with isolating and replicating active compounds once samples are recovered.
- b. Unlike terrestrial bioprospecting, deep sea bioprospectors are not aided or directed by a large accumulation of scientific knowledge or by traditional indigenous knowledge.

Importantly, marine bioprospecting activities will have no negative impact on local communities. Moreover, deep sea marine bioprospectors will be sampling biological material at ocean depths not previously accessible to the traditional peoples of New Zealand. Therefore, these bioprospectors will not be exploiting any indigenous traditional knowledge to aid in discovering valuable biological material, and will not be impeding on future indigenous access to genetic resources of traditional use.

The above should be considered when devising benefit sharing regimes and in stipulating the time period for access under a bioprospecting agreement.

### **Question 2) On New Zealand's current frameworks to access biological resources**

Existing access frameworks would benefit from operating within a more co-ordinated and comprehensive bioprospecting framework.

### **Question 3) On a comprehensive bioprospecting framework for New Zealand**

There should be a centralized system to manage bioprospecting that is comprehensive, transparent and easy to follow.

Such a system should however provide scope for bioprospecting parties to negotiate project agreements that can be tailored to individual circumstances.

#### **i) Potential policy benefits and costs**

Information and knowledge sharing related to deep sea marine bioprospecting would be of significant value to New Zealand, and offers the State the opportunity to:

- Increase the States knowledge of its biodiversity and deep sea ecosystems;
- Improve the States understanding of the value of deep sea ecosystems and that of deep sea biological resources to both the R&D process and human well-being; providing a market-based incentive for biodiversity conservation;
- Increase knowledge of New Zealand's biota, taxonomy, and ecological framework. For example, by discovering and identifying new species, thereby expanding the scope of species inventories;
- Aid in the promotion of the States marine biodiversity education levels to help ensure future conservation and sustainable use of biological resources in New Zealand; and
- Provide research which will contribute to the basis upon which New Zealand can make informed management decisions, including conservation measures.

Benefit sharing regimes (for example royalties payable to the State) should reflect the high cost and commercial risks associated with deep sea marine bioprospecting.

Bioprospecting activities will likely attract more biological research to New Zealand, with bioprospecting success potentially leading to the increased development of research based industries in the State, and the encouragement of investment in a State based biotechnology industry, as well as associated research and development infrastructure.

Collaborative research could be undertaken between the State and the bioprospector subject to appropriate non-competition and confidentiality agreements.

It may not be feasible for a bioprospecting company to transfer technology as part of a 'capacity building' regime due to intellectual property issues associated with patented technology.

#### ii) Policy scope

The term "Bioprospecting" should be clearly defined, and should include the statement "...for commercial gain". Non-commercial activities, such as obtaining samples for the purpose of conducting an Environmental Impact Assessment (EIA), should **not** be considered bioprospecting. In this case, no revenue is being derived from the samples themselves. In fact, a lot of the time the samples are preserved in such a way that they could not be developed for commercial gain. Moreover, incorporating non-commercial research activities within the scope of a bioprospecting policy can limit the number of environmental studies conducted and scientific data collected to the detriment of the State and scientific community.

While legitimate scientific research (such as carrying out an EIA) should not be captured, Bioprospecting should be defined in such a way as to prevent parties from collecting samples under the guise of 'non-commercial scientific research' and subsequently selling the samples or carrying out commercial development.

If non-commercial activities do end up being included in the scope of bioprospecting policy, some specific activities, such as collecting data for an EIA, should be excluded.

Collection and exportation of biological material for scientific purposes should be done under existing permitting frameworks, and there should not be multiple permits required for the same activity.

For the purposes of deep sea marine bioprospecting the central government will need to play at least some role as the EEZ falls within national jurisdiction.

Property rights should be clear. It is suggested that upon collecting a biological resource, ownership and all rights with respect to that resource should be conferred on to the bioprospector.

#### **Question 4) On mātauranga Māori**

Any policy must take into account the fact that not all bioprospectors use traditional knowledge in their search for biological material. In the case of deep sea marine bioprospecting, there is no traditional knowledge at all as the water depths are well below those historically exploited by Maori.

#### **Question 5) On international bioprospecting frameworks**

There should be one centralized body to issue permits.

#### **Question 6) On any other issues**

##### **Exclusive rights to bioprospect:**

Bioprospectors should be able to apply for *exclusive* rights over a defined area (subject to meeting appropriate performance targets) to allow the licence holder to commercialise the opportunity.

Granting exclusive rights to areas would maximize New Zealand's ability to comprehensively monitor and control the sampling quantity, environmental impact and associated benefit sharing. This would be particularly beneficial in terms of the marine environment. Granting exclusive rights would also reduce the environmental impacts that occur when a range of individuals and organizations are collecting and harvesting biological material and selling it on the spot-market in parallel. This activity can result in over-harvesting because of the difficulties associated with regulating and monitoring such spot-market activities.

##### **Exporting and Material Transfer:**

There should be scope to export material out of New Zealand. This could be done via a permit requiring the bioprospector to identify the specimen being exported (including e.g. the location from which, and date it was taken) and a description of planned activities; enabling New Zealand to keep track of activities.

There should also be scope to transfer material to third parties outside of New Zealand in order to conduct research and development. For example, it may be necessary for bioprospectors to partner with biotechnology or pharmaceutical companies who have their research facilities elsewhere.

**Confidentiality**

Any commercially sensitive information or samples supplied by the bioprospector to a State agency should be kept confidential.

We hope these comments will help you to frame an appropriate bioprospecting policy in New Zealand. Thank you for taking these comments into considerations and do not hesitate to contact us should you have any further questions or comments.

Kind regards,

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