

ICP-8 HIGHLIGHTS: TUESDAY, 26 JUNE 2007

On Tuesday, delegates to the eighth meeting of the UN Open-ended Informal Consultative Process on Oceans and the Law of the Sea (Consultative Process or ICP-8) reconvened in a discussion panel on marine genetic resources (MGRs). In the morning, presentations were made and a discussion was held on understanding activities related to MGRs and other relevant aspects relating to experiences in collection. In the afternoon, delegates addressed issues regarding experiences in commercialization.

DISCUSSION PANEL ON MARINE GENETIC RESOURCES

EXPERIENCES IN COLLECTION: Presentations: Sophie Arnaud-Haond, French Research Institute for the Exploitation of the Sea, presented on genetic resources around hydrothermal vents, cold seeps and nodules in the deep sea, stressing that access using ships, submarines and robots is difficult and costly. She highlighted the diversity and biomass of bacteria in these ecosystems and stressed that knowledge is needed to: understand how deep sea systems interrelate with ecosystem cycles such as the carbon cycle; and construct ocean conservation strategies to address direct threats from extractive industries and indirect threats from global warming.

Marcia Creary, University of the West Indies, Jamaica, highlighted that 3427 species of marine flora and fauna have been identified in Jamaica's EEZ, with only 149 from the deep sea and perhaps a million species yet unknown. She explained that the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) governs Jamaica's endangered species, but because many species are not endemic to Jamaica, they do not require a Material Transfer Agreement for export. Creary outlined a coral reef restoration project identifying coral species that are resistant to rising sea temperatures, and discussed challenges facing Jamaica's MGR management, stressing that small island developing States need to establish controlled access, prior informed consent, participation in research, and mechanisms to share proceeds from MGR activities.

John Hooper, Queensland Museum, Australia, discussed maximizing research benefits from biodiscovery for both research and coastal states, and experiences in major biodiversity collections in Queensland. He highlighted Queensland's 2004 Biodiscovery Act, which established a streamlined legislative framework to regulate collection, ensure investment and fair and equitable benefit sharing, and enhance knowledge of biodiversity. He noted benefits to research states such as acquisition of specimen libraries, and commercial benefits from the discovery of new structures and compounds, including those with anti-

cancer properties. He said benefits for coastal states include capacity building in taxonomy, identification of species diversity "hotspots," and new knowledge relevant to bioregional planning.

Emma Sarne, Philippine Permanent Mission to the UN, on behalf of Maria Rowena, Southeast Asian Fisheries Development Center, discussed bioprospecting and the management of Philippine MGRs in the Verde Island Passage Marine Corridor, stating that the Philippines is a center of marine biodiversity. Noting threats to MGRs, including illegal trade and fishing, she outlined a 1995 Executive Order to regulate bioprospecting and biopiracy activities in the Philippines on the premise that biological and genetic resources are part of the national patrimony. She emphasized that while bioprospecting for academic pursuits is beneficial, if the materials are subsequently patented to foreign investors, the source country can lose control over its own MGRs.

Discussion: Commencing the discussion, Co-Chair Maquieira challenged panelists to identify the "enabling environment" that could improve bioprospecting access and research. In response, Arnaud-Haond recommended joint ventures that pool stakeholder efforts. Hooper agreed, stressing the need to facilitate access and to ensure legal certainty for interested parties such as scientists and bioprospectors, while retaining coastal state involvement, such as in processing. Sarne said regulations should: be practical and enforceable; delineate liabilities and responsibilities among partners; and allow work to proceed while encouraging collaborative efforts between those with research technology, and those with biodiversity information. One participant suggested that regulation should permit legal access to information, while ensuring that coastal states benefit from the research.

Many participants asked about biopiracy, including how developing countries might manage the issue. Hooper underscored that if access is unduly restricted then illegal activity might occur, but a clear, certain process will encourage legal behavior. Sarne noted that the global magnitude of biopiracy is unknown, adding that identifying the "victim" can be difficult. Arnaud-Haond proposed that newly-described species and genes should include a reference to the location of the original sample.

Regarding advice on drafting legislation, Sarne recommended establishing local enabling laws and identifying available resources. On government involvement in defining codes of conduct for the scientific community: Creary said the Jamaican government has not been involved in designing codes of conduct for scientists; Arnaud-Haond noted that codes are often based on mutual trust, rather than written; and Hooper stated that ethical codes regarding animals and product usage were enshrined in the 2004 Biodiscovery Act. Arnaud-Haond said when data and resources are shared, the code needs to be developed in collaboration with researchers and governments.

When asked about potentially destructive sampling methods, and following standards or protocols for research practices, Hooper said countries aspire to implement less destructive methods. When asked if long-term monitoring of the impacts of MGR collection exists, Hooper described a study on bottom trawling and benthic organisms that examined long-term harvesting of species, and Arnaud-Haond highlighted a Canadian study on deep sea vents. On databases, Creary called attention to a clearinghouse mechanism in her country, and Hooper highlighted the UNU database on biodiscovery.

On shortfalls in taxonomic information, Hooper and Arnaud-Haond lamented that training and funding for this work is declining even in developed countries. IUCN suggested an international collaborative structure on deep sea research, with government funding and open to all scientists. Hooper underlined the difficulty of capacity building for taxonomy, but noted that biodiscovery has helped fund taxonomy within a national context. In response to a question concerning species mobility and range, he explained that scientists assume that MGRs within a coastal state are endemic.

The following issues were also raised: strengthening compliance through awareness-raising and setting clear rules; that concepts of “compliance” and “non-compliance” do not apply to bioprospecting in areas beyond national jurisdiction; the possibility of international collaboration on codes of conduct; and the legal ramifications of using certain terms, including biopiracy.

EXPERIENCES IN COMMERCIALIZATION: Presentations: Geoff Burton, Jean Shannon and Associates, Australia, outlined how both public and private research bodies are commercializing MGRs and underscored that nature, as opposed to recombinant chemistry, is still the major source of new drugs. He highlighted that commercialization of MGRs is largely in the hands of specialized biotechnology companies and publicly funded bodies, both of which usually lack capital. He stressed the need for managing legal and commercial risks, said that companies are keen to ensure that their samples are collected legally, and urged governments to support commercialization by providing legal certainty and reliable taxonomic information.

Marc Slattery, University of Mississippi, US, spoke on experiences in commercializing MGRs, particularly in the pharmaceutical field. He reported that getting from the collection stage to the commercial launch of a drug can take between 15 and 30 years, and that very few samples ever have commercial potential. Slattery therefore recommended that governments should not hope for a “lottery win” but should focus on the benefits of research collaboration, which include improved scientific knowledge and technology transfer, local educational opportunities and a boost for local economies. He added that research results can also contribute to solving marine environmental problems.

Simon Munt, PharmaMar, Spain, described his company as a biopharmaceutical business that focuses on the discovery and development of marine-derived medicines. He explained the business case for undertaking MGR research and conserving biodiversity, stating that 60% of the 877 new chemical entities that reached the market over the last 20 years had natural origins. He highlighted the need for legal certainty to protect research investment and then described the process of using macro and micro-organisms and environmental DNA to develop medicinal products, emphasizing that the process takes at least 15 years and does not guarantee success.

Maureen McKenzie, Denali BioTechnologies, addressed economic self-determination and commercialization of subsistence marine resources of Alaska Natives, and said Denali depends heavily on the wisdom of native people for utilizing resources for commercial purposes, particularly for nutraceuticals. She discussed the Alaska Native Claims Settlement Act, with its self-imposed ethical standards and “fair treatment” provisions, and noted implementation of a “biodiversity access agreement” with a tiered royalty/profit sharing

model, and compensation based on the extent of participation in product development and commercialization. McKenzie underscored that participation may involve shared intellectual property and “co-invention” patents. She discussed instances where access to marine habitats is through native lands, marine resources travel inland to native lands, and native people are a repository of knowledge for food and medicinal applications of marine resources.

Discussion: Many delegates asked about issues of legal certainty, which all panelists agreed were essential in order for biotechnology companies to proceed with development. Slattery recommended that bioprospectors and countries avoid misunderstandings by signing a memorandum of understanding on benefit-sharing at the beginning of the research process. Burton highlighted the CBD’s Bonn Guidelines on Access and Benefit-Sharing as a useful template when developing national approaches, and both Slattery and Burton suggested that governments create a single focal point for contact with bioprospectors.

When asked how to enable research in areas beyond national jurisdiction, Burton suggested codes of conduct to ensure research is conducted in an appropriate manner, and Slattery suggested international cooperation between countries, including sharing research voyages, samples and results. On natural versus synthetic products, Munt noted that many synthetically-manufactured products are based on natural compounds. He said products made from natural sources can be difficult to standardize, and Burton added that this can protect naturally-based products from being illegally replicated. McKenzie noted that natural products have a competitive advantage in the dietary-supplement market.

In response to a question on whether national regulatory mechanisms could be a disincentive for companies wanting to undertake marine research within national jurisdiction, Burton explained that most research occurs within coastal waters to minimize fuel and vessel costs. Slattery agreed, noting that one country’s regulatory system can be more alluring than others. Munt added that all of PharmaMar’s MGR samples come from water near the coast.

In response to a question on intellectual property options for industry, including in relation to traditional knowledge, Burton highlighted that trademarks for nutraceuticals provide consumers with high-quality products that concurrently respect indigenous communities’ rights. McKenzie underscored that “indigenous branded products” can enjoy market advantages.

Responding to a question on existing arrangements between companies and coastal states that might govern access and benefit-sharing arrangements, Slattery noted the National Cancer Institute as an effective model. In answer to a query on facilitating participation by developing countries with limited resources, Burton called attention to bilateral agreements and GEF projects aimed at assisting developing countries with access and benefit-sharing arrangements.

Panelists also discussed: the difference between the marine and terrestrial context of intellectual property rights of indigenous products; encouraging research activities in the high seas; and society’s views on the ethics of marine biotechnology development.

IN THE CORRIDORS

On Tuesday, delegates appeared to be “sponging up” the highly technical information on MGRs, with one delegate commenting that participants were slowly beginning to realize the oceanic breadth and complexity of the topic. Panelists and delegates alike seemed to agree that more and better science would help the policy discussion to move forward at more than a mollusk’s pace, although one observer felt that delegates’ focus on listening and learning represented a “strategic avoidance” of a possibly contentious legal and policy debate. Overall, hopes are high that when the “Friends of the Co-Chairs” group begins to draft text on Wednesday night, participants will focus on “moving forward together, rather than highlighting differences.”