

The unprecedented policy issues emerging as melting sea ice opens up new opportunities for deep-sea mining

June 19 2014, by Genevieve Wanucha



The U.S. Coast Guard icebreaker Healy and the Canadian Coast Guard icebreaker Louis S. St-Laurent during joint exercises to define the full extent of the Arctic continental shelf. Credit: U.S. Geological Survey

Our planet's crown of Arctic sea ice may disappear for entire summers by midcentury as the North Pole warms, opening up brand-new opportunities to mine rich stores of oil, gas, and coveted mineral deposits, including rare earth metals used in cell phones. The emerging situation is unprecedented: There are legal and policy questions about how conflicts over national boundaries, concerns about environmental damage, and threats to the well-being of indigenous peoples will be handled.

Oceans at MIT brought these questions to Lawrence Susskind, the Ford Professor of Urban and Environmental Planning at MIT, director of the MIT Science Impact Collaborative, and vice chair of the Program on Negotiation at Harvard Law School. He specializes in environmental policy and resolution of water conflicts, and sees a unique need for new Arctic agreements.

Q. In your view, what is the real policy issue in the Arctic?

A. With the thinning and elimination of Arctic ice, there will be new efforts to make navigation options open to more countries, across the top of Russia. There will be more access to search for oil and gas, exploit it, and ship it. Once there is more navigation and more focus on oil and gas exploration, there will be a push to populate more of those areas for development purposes. When that happens, there will be a conflict with native cultures in Canada, the United States, Russia, Finland, and Norway that have been there for a very long time. There will be jurisdictional battles about whose rules apply to managing and protecting natural resources, including fisheries and mammalian life. Who gets to decide what routes are open to whom, where oil and gas exploration might be restricted, where base camps get built, and how the sovereignty of [indigenous peoples](#) will be protected?

To me, I think the issue lies in understanding what it means to manage the Arctic in a sustainable fashion. Essentially, let's not destroy the Arctic in the process of exploiting its mineral resources. How do you accomplish sustainable management when you are talking about eight Arctic countries—Russia, Norway, Sweden, Finland, Canada, Denmark, Iceland, and the United States, as well as a second set of countries with interests in the Arctic—who assert rights of various kinds? The Arctic needs to be managed as a whole, and we don't yet have an adequate mechanism for making joint decisions about its use and protection.

Q. Speaking of adequate mechanisms, what about the United Nations Convention of the Law of the Sea (UNCLOS), in force since 1994, which gives nations bordering the Arctic Ocean the right to claim an "exclusive economic zone" that extends 200 nautical miles from the continental shelf? Will UNCLOS be involved in future Arctic policy?

A. It's true that the UNCLOS establishes exclusive economic zones. The United States insists on implementation of that provision, even though it has refused to ratify the treaty [because of political disagreements over the International Seabed Authority, created under the UNCLOS, to regulate deep-sea mining in international waters]. Because the United States hasn't ratified UNCLOS, we haven't been able to formally claim our underwater boundaries. And Russia questions that if the United States isn't bound by the restrictions the UNCLOS imposes, why should Russia accept them?

There's an ongoing disagreement among the eight countries over who occupies what boundaries beyond their exclusive economic zones, all the way to the North Pole. Some mechanism will have to be found to sort

out the competing claims. Moreover, there are other non-Arctic nations, along with nongovernmental actors, who see themselves as stakeholders as well. There's no treaty for the Arctic like there is for the Antarctic—although the Antarctic treaty isn't a good model for the Arctic, because it basically restricts almost all development.

There are other international agreements that affect the ocean and the use and protection of ocean resources. The World Trade Organization has agreements, for example, that affect the trade of products from the ocean. So it not necessary that the UNCLOS be formally ratified by the United States for there to be clear norms with regard to the use of coastal resources, fisheries, navigation, and a variety of other features of the Arctic.

The United States is part of the Arctic Council, an intergovernmental forum that promotes cooperation among the Arctic nations. In fact, the United States is set to take over the chairmanship of the Arctic Council in 2015. There is some talk that Secretary [of State John Kerry] is going to appoint an Arctic ambassador shortly. The Arctic Council is not an entirely adequate mechanism for coping with the changes in the Arctic. For example, it offers no way to resolve disagreements among claimants, as there is in the Antarctic. And indigenous peoples feel that they should have more of a formal role in the Arctic Council.

Q. Who decides where private oil companies can drill?

A. Private oil companies will be subject to national regulations; the question is, "Where are the national lines in the Arctic?" It's not clear. Usually when someone drills in the ocean floor, they have to purchase the right to do that from the relevant country. In the Arctic, the underwater boundaries are not clear.

Q. What would an adequate Arctic policy look like?

A. It will be necessary to create some set of agreements—maybe an entirely new Arctic treaty that acknowledges and coordinates, but goes beyond, existing treaties. Zoning some areas [as] absolutely off-limits to any development makes sense, because they are hugely important ecologically. Identifying priority areas for oil, gas, and mineral exploration would probably be a good idea, if some way of sharing a portion of the financial benefits could be worked out. Most treaty regimes create a superstructure, including an executive committee, technical committees, scientific advisory groups and their reporting structures. That doesn't exist yet in the Arctic. There are pieces under different regimes, but all of it needs to be pulled together.

I think we should designate certain ecologically critical areas as off-limits until we can guarantee their safety, and other areas as priorities for explorations and exploitation of mineral resources. To do this, countries and nongovernmental actors will need to work together. Some way must be found to manage the Arctic in a sustainable way.

Q. How will indigenous peoples be affected in the future?

A. There are hundreds of Inuit and other indigenous communities in the Arctic. Unfortunately, leaders of the Arctic Council countries have not been talking to these communities about how they are thinking of parceling out the Arctic. There are important agreements that are supposed to protect the rights of indigenous peoples, guaranteeing them free, prior, informed consent, but these are not being honored at the moment.

For example, the seal trade is very important to indigenous groups in

Finland, Norway, and Greenland. The World Trade Organization bans the commercial trade of seal products, although the WTO does make an exception for seals caught by indigenous groups. What if an indigenous nation contracts with someone to catch seals? How will WTO rules play out?

Q. How do your interests relate to the Arctic?

A. My work is about multiparty negotiations over the allocation of natural coastal and ocean resources. At the MIT Science Impact Collaborative, we design new forms of collaborative governance and collaborative adaptive management (CAM). Our goal is to foster novel strategies for private, governmental, and nongovernmental interests to work together, and to take science seriously. You can learn more about our tools on our [website](#).

A focus on CAM could lead to progress in the Arctic. The Arctic nations need some way of establishing an orderly process for overseeing exploration, development, and preservation. To achieve this goal, countries, and private and nongovernmental interests, need to be in conversation and set rules that can then be enforced collaboratively and adjusted over time, especially as the impacts of climate change unfold.

Q. Do you and your MIT students and colleagues have plans to get involved in the Arctic?

A. There are a few ways that the MIT Department of Urban Studies and Planning could get involved in the Arctic. The Icelandic government chairs the Arctic Circle, a small number of countries trying to broker conversations among Arctic stakeholders. They have asked for our help. The Program on Negotiation, a joint venture between Harvard [University], MIT, and Tufts [University], will try to facilitate some of

the dialogue I have already mentioned. And if the United States, as the new leader of the Arctic Council, were to ask us for assistance, we would be glad to provide it. However, this is a difficult time because of the explosive relationship between Russia and the United States. Russia is central to what happens in the Arctic, because of its extensive territorial claims in the region. So the U.S. and Russia, along with others, will ultimately have to talk about the future of the Arctic.

If we get involved, it might also be under the auspices of the Water Diplomacy Program. Every June, we hold a one-week workshop to which we invite senior water professionals from different parts of world. The workshop combines the science of water management with the negotiation instruction methods developed by the MIT-Harvard Public Disputes Program at Harvard Law School. We offer interactive lectures, problem-solving clinics, and role-play simulations to help participants learn the techniques and strategies of water diplomacy.

We held the workshop for Jordanian, Israeli, and Palestinian water professionals several years ago. Interestingly, just last December, the Mideast governments signed the Red Sea-Dead Sea deal—the first agreement between Jordan, Israel, and Palestine about water. We can't say for sure whether the Water Diplomacy Workshop played any role, but some of the senior negotiators involved did attend the Water Diplomacy Workshop. We are focused this June on the Nile River basin. Maybe next year we can bring water professionals from the Arctic together at MIT.

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Provided by Massachusetts Institute of Technology

Citation: The unprecedented policy issues emerging as melting sea ice opens up new opportunities for deep-sea mining (2014, June 19) retrieved 20 April 2024 from <https://phys.org/news/2014-06-unprecedented-policy-issues-emerging-sea.html>

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