



Interview with
Rohan Davis
Ethics Advisory Board

1st Question

Interviewer: What are the main ethical challenges in marine bioprospecting that projects like EUREMAP need to address right now?

Rohan Davis: Okay, so I would say that just having the right... in place for collecting marine organisms is critical. I think EUREMAP needs to be as Nagoya compliant as possible and acknowledge where the samples came from, and there needs to be benefit-sharing agreements in place from an ethical standpoint.

Interviewer: So, related to this, do you think these challenges are more related to governance, technology, community involvement?

Rohan Davis: I think it's more governance and just having the right legal framework in place that enables someone to commercialize a compound or an extract that, through the consortium, you might discover.

Yeah, no, I think it's... unfortunately, it's a lot of legal... there's a lot of legal requirements for bio-discovery. Actually, I shouldn't say unfortunately, because it's a good thing, because third world countries who previously have had samples collected and no acknowledgement of these collection trips, there's potential for these countries, if everything's done right, to have royalties if something is commercialized. So, it's a good thing. It's a good thing, but it takes more time to set up for sure.

2nd Question

Interviewer: So, and looking ahead, how do you see the future of marine bioprospecting and what ethical priorities should guide its development?

Rohan Davis: Okay, so, I mean, I think the marine environment has been under-investigated today from a bio-discovery perspective.

So, I think marine bio-discovery has a wonderful future and we're going to keep on discovering new species of microbes and macroorganisms and these organisms are going to give us new chemistry that could be developed into future pharmaceuticals or other commercial products, maybe in the animal health or nutraceutical areas. I think marine bio-discovery is a wonderful thing to be taking part in.

It's going to provide new medicines for the future. But ask me the second part of that question, please.

Interviewer: So, related to the ethical priorities, what are the key drivers? For instance, do you think comparing benefit sharing or biodiversity protection, what are the key drivers when you talk about ethical priorities related to marine bio-prospecting?

Rohan Davis: Yeah, so, certainly, benefit sharing agreements are really critical to moving forward and commercializing a product.

And it's the fairest way, ethical way to do this type of research, for sure. I think understanding biodiversity and also trying to protect it where you can is also important. So, there's other legal parameters that need to be in place for this type of research so that people don't go and dynamite a reef in order to do their collecting.

They don't destroy the natural environment. I think technology has a role to play here as well because we, us humans, and scientists, we're getting better and better at working with smaller amounts of material. So, we don't have to go and collect a ton of quantities of a sea squirt or a sponge now.

We can collect very small amounts that have a minimum ecological impact. And that's a really good thing for the natural environment. If we try to minimize the disturbance of these natural environments, these biodiversity hotspots, if we can minimize the impact, that means that these organisms can continue to flourish and grow.

And that means we could go back and get some more material if needed. But I think also with technology and the developing biotechnology scene, we're seeing heterologous expressions. We're seeing microbes being taken advantage of to do fermentations artificially in order to gain the products that we want.

And I think even though a lot of compounds come from sponges, I think it will be the microbes in these sponges that many, many, many sponge metabolites will actually be identified as being microbe-derived. And this will be a real advantage for us humans because we can ferment the microbes much easier than we can grow, say, sponges, sponges or soft corals.

Interviewer: So could we say that related to biodiversity protection, the challenges are more related to technology, and the benefit sharing are more related to the governance. Can we say that? Or there's just an intricate relationship between these challenges and key drivers?

Rohan Davis: I think there's a lot of interconnectedness between all of these. Governance is important. Once you've got the governance in place, you can go and do marine biodiversity discovery.

The technology allows us to be more efficient at biotechnology, the marine biodiversity discovery, I think. Yeah, I think I'd prefer to keep them separate if possible, but they are related, of course. Okay, okay, okay.

3rd Question

Interviewer: So and for the last question, I told you this is going to be a very brief interview. Related to the EUREMAP's role, from your perspective, how can EUREMAP contribute to setting high ethical standards in this field specifically?

Rohan Davis: So, I mean, EUREMAP needs to work with governments, it needs to work with politicians. But I think communication is also very important.

And, you know, there's multiple countries in Europe trying to do this marine biodiversity discovery, and all of them have to communicate efficiently and make sure everyone is on the same page, that everyone understands the rules and the guidelines and operates under those rules and guidelines. So I think one of the challenges, because I was in Trompsø recently for a General Assembly, and I don't know how many countries were represented, but there were a lot of people from different parts of Europe, and it's important that they all continue to talk and communicate with one another and come up with maybe a standard set of guidelines that everyone's comfortable with. I think that would be a potential advantage and a nice outcome from this particular consortium.

Because these things will continue to, there'll be new consortiums that will run in the future, and it would be nice to have some rules and guidelines in place sooner rather than later. I think there already are, to a degree. But everyone has to be on board with that.

I think that's critical. So the most practical step is to create a communication environment and guidelines for future bioprospecting projects.

But I think I would make the comment that, you know, that the United Nations are working on this sort of stuff. And the Nagoya Protocol has been published, and many people have signed and ratified it. So you don't need to reinvent the wheel.

I think the Nagoya Protocol is something that just needs to be embraced by all parties in EUREMAP. And then ethically, I think you're moving in the right direction. Okay.

Interviewer: So would you say this could be a pioneering project when we talk about the ethical challenges in this field specifically, or do you have any other examples of other previous projects that stamped good guidelines related to ethical concerns?

Rohan Davis: I mean, I think we've, I mean, just personally, here in Queensland in Australia, with the bio-discovery that we do here in the marine environment, we have a benefit-sharing

agreement in place with the state government that was signed in 2018. And we also were part of a, we liaised with the local government to come up with a Queensland Biodiscovery Act. And that was in 2004.

That set the scene for rules and guidelines by which hopefully all scientists in our part of the world would operate when they were doing bio-discovery. So I think that, I mean, I'm not saying our system is perfect. I'm sure it's not.

And the other thing is we have not, let me just get this right. Australia has not, I believe it's signed the Nagoya Protocol yet. They've ratified it, but not signed it.

I think that's the order. So even our government should be putting pressure on our government to sign up to those sorts of things and finalize those agreements. But yeah, I mean, I think a lot of people that I know, I think Europe's overall Europe is, does a really good job of thinking about the ethics of, around bio-discovery.

So I feel very confident that EUREMAP will, I think that they've been set up well and ethics has been part of the discussion from day one. That's my understanding. I mean, I've only, this is the first time I've been part of a EUREMAP consortium, just so you know.

Someone like Marcel Jaspers, I think, has been involved in a couple of different grants. And so I'm sure you've spoken to me, I know you were going to speak to Marcel as well. Yeah, I think he would have a lot more to say from a European perspective.

But I think a lot of people around the world can improve the way that I do ethical bio-discovery. And I think most people are invested in trying to get on board that process. It's perfect.