Interview with

Eriko Takano

Ethics Advisory Board

1st Question

Interviewer: In your view, what are the main ethical challenges in marine bioprospecting that projects like EUREMAP need to address right now?

Eriko Takano: I'm not sure how many people realize that, you know, bugs, antimicrobials, very useful chemicals, things like this can be isolated, discovered from marine organisms. And so, I think it's quite important to be able to, I don't want to use the word educate, but to have engagement with the public. What exactly you are doing to make sure that the public understands it.
Also, another thing perhaps, not sure if people understand, is when you say marine bioprospecting, what does that mean? And what's living in the marine, you know, you might think fish is the first thing. But in fact, fish is not the only thing that you're looking at, actually more like bungees, you're looking into the soil, you're looking at seaweed, all these things are sources for bioprospecting. So, I think if I summarize it, it's about what is down there in the marine environment, what are your sources? The number two, what do you mean by bioprospecting? And what are you actually discovering? These are really important things that should be communicated to the public.
And that's important because in terms of ethical challenge, people don't really think about when you say ethical, you know, you think about sourcing and all this kind of stuff. But in fact, ethical includes dialogues and getting the public on board, because that comes even later on when you're trying to sell them as, you know, drugs or commercialized things. I think it's always important, sort of as a scientist, to be able to have a dialogue to explain what you're doing and how important it is to the community, to the society, that we're giving back to the society.
So that, you know, if you want to think more ethically in terms of doing the right thing, you're not damaging nature and things like this. Of course, that's important.
You're not just taking different things away, using the sources, natural resources, ethical as much as possible. You're not trying to damage these things. You're not being invasive.

Interviewer: And between governance, technology and community involvement, you believe the bigger challenge is the community involvement part?

Eriko Takano: Yes, because I think that's the most difficult. And it takes time.

Government, if you show that, you know, you've got lots of compounds that are really important to you to find them, discover them, they will understand very easily. Technology wise, okay, we are establishing technology that will be safe, hopefully, for the environment. And I think the public, again, is what it takes the longest, to dialogue.
And also think about, you know, you have all age groups, right from younger children to older people, and you have to communicate with them in a different way.
To old people, maybe you want to emphasize how good these things that you're expecting are for your health, longevity. It's much more complicated than one thinks.

2nd Question

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

Eriko Takano: I think it's a new frontier, this marine bioprospecting, it's just starting, just realizing how good these resources are, and they're our next generation resources. But at the same time, I think we have to be really mindful of how we bioprospect the marine living organisms, because you can't do what's done on land, you know, into being very invasive, damaging things.
And then there's a way of reintroducing, if you take something up like sponges and seaweeds and stuff like this, there should always be a way of re-establishing the natural community. So for example, let's say you found something really interesting from a seaweed, and you want to commercialize it, but then you need to harvest lots of it. That would be really, really dangerous, because that's very invasive to the natural environment.
And I think that is something that you really have to think of. So instead of doing things like this, one could think about, is there a way of using farming to cultivate these things? Is there another way of actually juicing these things? That's where synthetic biology, like what we're doing comes in. So not using a marine host, but using something that we already have.
So then you're not actually endangering any of the natural samples of things that you need, seaweeds or sponges or whatever it is. I think that's really important, because if you need to get lots for drug discovery and development, you need tons and tons of this stuff. You can't just go off to a natural seaside and harvest everything that's there, because then there's nothing left.
And of course, then it becomes an endangered species, and you don't want to do that. I think that's a way of sourcing your sample, sourcing your natural stuff. How are you going to do that if you found something important? Okay, it would be something if it's not going to be chemically synthesized.
And of course, chemical synthesis is not what you want know, because again, it's not the best thing for the environment. I think these kind of things needs to be thought through and be discussed with the industry, especially those industries that want to commercialize.

3rd Question

Interviewer: From your perspective, how can EUREMAP contribute to setting high ethical standards in this field?

Eriko Takano: I think EUREMAP is well placed because you have many groups from different European countries participating in the project, and though being under the European Commission, though, all the countries should be agreeing to do things in a certain way, but sometimes you have cultures that have different, backgrounds, people see things in a different way as well. So, to come up with some of these, you know, standards, how do we talk with the public? How to not be invasive with the natural environment? It's important to make it as a standard within the project, so that, you know, you're going across the barriers of culture, across the barriers of language within the EU as a whole, so that you have the same kind of standard, good, ethical, to build up.
Interviewer: I have a follow-up question to this one. So, do you have any idea, of any practical steps that EUREMAP could take to become a reference in this field?
Eriko Takano: I think, you know, we were talking about this engaging with the public, with all different age groups, right? And you could even make a little video or cartoon or something like this for the younger group, people where you should describe what you're doing, and why is it so important for the society, and then you could have some kind of a pamphlet or something like this for the older people, explain as well, too. I think, to me, that's already really difficult to do, to get people to understand what you're doing.
Of course, I know Jasper is involved in the UN and things like this, that's very high level. And it's great if you could get him to speak for you. But I think it's much better to go to the general thing.
Because that way, you will be communicating with a lot more people, rather than just the politicians. Politicians, yes, are important. If you want to change regulations and things like this, it's important. But on the other hand, if the public doesn't come with you, then actually, there's no point.

Interviewer: For me, that's perfect, because that's my area. I work in science communication, so it's perfect, what you're saying.

Eriko Takano: And this is really difficult, the science communication, because I have seen companies, for example, there used to be a company who was making vanilla, which is a vanilla component. And of course, they had lots of backlash, of friends of the earth and all this kind of stuff. And on their website, they had a little cartoon trying to explain exactly what they're doing.
It's not like playing God, it's really, you know, for the community, so and so forth. Even then, it was very, very difficult for public to understand, you know, what they're doing, you have to be really proactive, engage with the public, you must not teach them what they should think, instead you should really be engaging, because communication is to engage. It's not one directional, it's always bi-directional.
So you should never say that you teach the public what we're doing. You have to engage with and it has the communication has to be back and forth. You have to really hear and listen to what the public are thinking.

You can start bombarding with science and things like this. You must never be to the word thinking that you're better than anybody else in that sense, right? As a scientist, be more humble to understand and engage with the public. I think that's really, really good work.