

Topic 5a – Policy

I think it might be strange to listen to the fact that the European Commission is investing in space. So there are many other policies that might deserve more attention. But what it is very important, and what we tried to explain to policymakers is that we are doing space for the Earth.

So everything that we are doing by launching satellites and observing our planet is really in support of many policies. Today, we are mostly speaking about the marine area, but it is true that all the other services looking in the land management, in the emergency situation in support of civil protection. Another point that is quite important is the border surveillance. We are looking also into aspects of climate change. So really, a lot of policies that are very important.

With these elements, we have the support of many partners I have to say. It's true it's very easy to convince space agencies. But in the end, the main support and the big result is that we have the support of the European Parliament. We have the support of the council, meaning the member states.

And this is very important, because when the regulation on Copernicus was adopted, we were in the situation where the budget-- there were constraints in the budget. But the European Parliament and the council pushed. They wanted it. And this is the reason why today we have the budget to run it until 2020, and we crossed fingers, and we hope to raise it even for the continuation and sustainability in the long term.

Things like the Copernicus system are bringing so many people together. There are government organisations. There are private companies. There are individual scientists working on projects. There are the end users. It's so collaborative, isn't it? All these different people are involved.

Yeah, this is true, and what we did with this Copernicus Marine Service is that we defined this marine service as what we call the core service. This is the common information all these people are looking for. A policymaker and someone going at sea, they are looking for the state of the ocean. They want to understand the ocean.

And so we have these people when we organise a user workshop, we have someone for a governmental policy bureau sitting close to someone in the private company working for the offshore things or someone for the research. And they are talking about what? About the ocean. What do you think about the temperature? Do you need more accuracy? Or what about the resolution?

Do you think that we should increase the forecast from one week to two weeks? Or the priority for you is to have the last two decades, because et cetera, et cetera? This is very true. Operational oceanography today is engineers, research, plus IT managers, plus marketing people, plus communication, plus the people that are able to translate this into a discussion with the policy makers, et cetera. It's very, very rich and very dynamic. I like it.

At the moment in the UK, the way we monitor the marine environment is very heavily based on in situ monitoring. So all of the waters around the UK that we are responsible for, we monitor with the ships-- CEFAS has a ship called The Endeavour. And it goes out very routinely to do a lot of the marine monitoring, and we have people to do the marine monitoring. We have smart buoys and a

whole complement of really cool gizmos, including gliders, which are great, and they're collecting a lot of data.

The thing is, as I said about southern elephant seals, it doesn't matter how much data you have, you're still collecting point measurements in space and time. So it gets you very, very accurate data at that point. But what about the synoptic overview of what's going on?

So when we say synoptic, we mean at the bigger view, that sort of zooming out and having a bigger look over the oceans.

Absolutely.

And of course, because the oceans are connected, you can't just do something here and ignore what's happening over here. So this is the benefit that satellite data has for policymakers is that it gives you more of the whole picture, not just one point.

Absolutely, and again, any point measurement is absolutely accurate, and it's brilliant. But the other thing is you've got that human error that you might introduce. So the way one lab does something might be completely different to a way another lab does something. But with satellites, you have year after year, you have very repeatable data. So you can have a time series that's very stable from year to year.

And you can be quite sure that what you're seeing in time and space, again, on that sort of step out and zoom out view is quite realistic. It's quite representative of what has been happening in reality.

And so the long time series is an important part of it as a policymaker, because they can use it as a benchmark.

Yeah, and I mean the time series is very important for researchers too. You can't really make inferences about change until you know what your baseline is. And of course, your baseline might change on an interannual scale. It might change on a decadal scale. So you need to be able to even get further than that in order to start to understand what the change can be attributed to.

With policy, it's quite important to know what you have now. So what is a seasonal thing? What is your annual thing? And we all work on this through something called the Marine Strategy Framework Directive, which is a European directive. And the point of it really is to get the UK and other European countries to good environmental status by 2020.

So we're all working under a similar motivation. We all want the same thing. We want good environmental status. We want it quite soon. And the framework is really good at helping us figure out how to do it, and where to do it, and under what sort of parameters we can do that. And some of these things can be measured by satellite. And that takes a lot of the burden financially and in terms of the labour to actually collect that data.

We're talking about things like not over-fish and not polluting.

Exactly.

And those are things that decisions about what people do on land can influence those areas, and you can manage them, because you know what's going on.

Absolutely. So we can't necessarily measure marine plastics from satellite, for example. But in the same way, that's a very good example of that interconnectability, because if you want to solve the marine plastics problem, you have to solve it on land. And it's the same sort of thing. If you are having eutrophication issues, if you're seeing really high chlorophyll values, and they are harmful algal blooms, and they just happened to be next to a farmer or a golf course that is over-fertilizing, and you have a lot of rain and a lot of runoff, there is always a link between the land and marine.

There's a complicated system. Lots of things are affecting lots of other things. And the better your spatial and temporal data, the more you know exactly where things are happening and what the changes are over time, the better you can try and understand that system.

And that's always quite exciting to work in this kind of area, because ultimately, you feel like you're just gathering puzzle pieces, and you go, oh, this picture is becoming so much clearer. I didn't realise that connects to that. But there is something quite exciting about being involved in that process. So I really enjoy that.