Francesca Trotman: Hi Bio-Diverse Festival. My name is Francesca, and I'm the Founder and Managing Director of Love The Oceans. We are a marine conservation organisation and today I'm going to talk you through all of our research and the work that we do in Mozambique. So I'm just going to share my screen with you so that you can see the presentation and what I'm talking about. So as I said, we're a marine conservation organisation. We're based in Mozambique. And I introduced myself, I'm the founder. But our team is very small. We're a micro organisation. So we're based in Jangamo, which I'm going to tell you the location, talk you through the location of where we are, in a minute. But we're based in Jangamo, I already introduced myself, Francesca and then we have our exec director, Andrea and our Community Outreach Manager, Pascoal. We also have Bento and Mario, who are our ocean conservation champions, which I'll talk about later, but they are almost like interns. And they're based here as well. And we use research education and diving strike action towards a more sustainable future.

And I'm going to talk you through our mission in a second, but just to explain exactly where we are, and the logistics of it. So we're based in southern Mozambique, East Coast, Africa, Southern yeah, in southern Mozambique, but southern Africa as well, East Africa, so that's south east Africa. And Inhambane is the southern province of Mozambique, we're based in Jangamo within that. And we're partnered with the resort Jay's Pro Dive Centre, and this is a drone shot of where we are. Um so as you can see, there's not a lot else in terms of construction along the beach, there's no massive resorts here. When I say we're partnered with the resort, it's straw huts. It's not like fancy five star resorts. And we're in a very, very rural area. And that I will come back to too because quite a lot, because that has a big impact on the way that we work, conservation wise and community conservation wise.

So just talking through our mission, and why we exist. So we are based in Jangamo, and our mission is to establish a marine protected area here. So a marine protected area offers a lot of protection for different animals. I initially founded the organisation to stop the shark fin trade, which is quite prolific here, but changed the mission to establishing a marine protected area as it offers more protection for a range of different animals and habitats. And we can also help the local community and have the marine protected area benefiting the local community, which is really important. You need humans involved in conservation. I'm a very, very strong believer in that because humans are usually the cause of the environmental issue. So they need to be involved in the solution.

So we're going to achieve the marine protected area through three different steps. So first of all, education. Change has to come from within. So we run education workshops, or Pascoal runs those education workshops. And we talk about things like sustainability and conservation and what sustainable fishing looks like. Protected Areas what that could look like, ecotourism pros and cons, why trash in the ocean is bad, all of those kind of topics. We work with 10 to 13 year olds in the schools. And that is a curriculum that's agreed with the elders here, which are like the mayors and that supplements the national curriculum. And we also work with the fishermen as well, the active fishermen doing sustainability workshops, and that covers the same similar topics, obviously, with adults, so it's a bit more advanced. And we also cover things like turtle poaching, and why turtle poaching is bad and more around like sustainable fishing, obviously, because we're working with fishermen. And so we have this agreed syllabus and we also teach swimming as part of our educational outreach. So that's basically because there's very few people know how to swim around 95% of people don't know how to swim. And there's such a fear of the oceans, which is such a major problem for ocean
conservation, because people don't want to conserve something that they're terrified of. So we also teach swimming to enable people to enjoy the sea safely, and hopefully inspire that passion for conservation.

So I'm going to talk through all of these areas in a bit more depth in a minute. We also have our research areas. So we do humpback whale research and megafauna research as financial incentives, for the marine protected area, we do fisheries research, and we do ocean trash research and we do coral reef research. So all of the areas of research that we are collecting, all of that is used to inform legislation change. So that can be the establishment of the marine protected area as a whole, but also changing the types of methods of fishing here and what's legal and what's not. Minimum landing size, things like that. And so the fishermen have the pull-factor of the education, wanting to change their ways and the push factor of the research, meaning legislation change. So having to change their ways, you've then got to provide a financially feasible way for people to live more sustainably. So a lot of our work is about identifying barriers that can stand in people's way of living more sustainably and then working with people to remove those. So sometimes they're financial barriers, they can also be skills barriers, which is a big barrier in this area, so education level is low, people leave school around the age of 13. And as we already discussed, most people can't swim here. So identifying those barriers, like not being able to swim and then helping people remove them teaching swimming, helps people live more sustainably. And that this is also kind of rolls into, on the financial side of things, alternative livelihoods.

So we have a whole section of our organisation develops alternative livelihoods, which supplement income, which alleviates poverty, but it also means that there's less pressure on the oceans because people aren't so reliant on the oceans as a protein source, if they have another source of income. So that can be aquaponics. It can be agriculture, sustainable honey harvesting, jobs in ecotourism. All of those kinds of things, too.

And so just to talk you through each section. So our fisheries research, the question that we're asking is in the top right, or what we're answering is in the top right corner of each slide, so I'll just move myself down. And for our fisheries research, we... we do do the shark fisheries research, which I mentioned before looking at the shark fin trade and how extensive it is here. But we also do research on everything that's caught. And with that, we're looking at the type of fishing as well, and which fishing type of fishing is most sustainable.

All of this research, as I said, is used for legislation change. But it's also used to develop community projects and take action around damaging methods of fishing. I'm going to talk about that in a minute. Because that we have a project at the moment which which combines our fisheries research and our coral reef research as well as our community outreach. So I'm going to talk a little bit about that. But this research is really important to be able to make those kind of decisions and make the right decisions for the environment.

So then we have our coral reef surveys. So our coral reef surveys we're partnered with Leeds University in the UK. And we have a five year strategy for collecting data on reefs on a permanent plot. But we also collect data and have been over the last six years on coral reef health and abundance and a biodiversity of reef of the reef itself, but also of associated species cryptic and non cryptic. So with this, what we're looking at is basically the yeah, a basic analysis of the health of the reef. We're the only NGO working in this area. There's literally no other charities or NGOs in Jangamo. And so we don't have any, like baseline data to go off. We
don't know what's happened historically in the area. Okay, there's some availability of satellite data. But I mean, there's no historic dataset here. So we're building one. So a lot of our work is understanding what the problem is before we can go any further because there's no point making rash decisions and jumping in and changing things too soon, when you don't know what you're doing.

So with our... the reason that this dataset and our fisheries dataset have come together for our sustainable fishing project, is because our fisheries dataset tells us what fish are being caught and through what method. So for instance, we know that sharks are caught for, um through long lining. And we know that nets are really unselective and can catch like mantas and dolphins and sharks and even a baby humpback whale a few weeks ago. And our coral reef surveys are obviously, telling us what is alive in situ on the reef. So our reef surveys have shown that we have quite a large imbalance between herbivores and carnivores, we're really lacking large herbivores on our reefs. And herbivores are really, really important because they are responsible for maintaining reef health. So they graze on coral-competing algae. Without the herbivores, the algae takes over and the corals can die off. And honestly, corals are super important for nursery grounds for all fish, so you end up with basically a cascade effect and a collapse in fish stocks here, ultimately harming humans.

And our fisheries research allows us to look at the fishing pressure and why that imbalance could be. So there's a couple of reasons it could be fishing sharks and removing the apex predator means that populations of the carnivores booming which overgraze on the herbivores Or we think this is more likely, especially based off the fisheries data that we have, there's been a selective fishing pressure on local reefs. So, netting and spear fishing both happen on very local reefs. So nets are usually swum out. And that means you're limited by currents and on how far you can swim that net and out. And usually it's not swum out very far at all because obviously, the deeper you get, the stronger the current is, the more likely you are to lose the net. And then spear fishing as well. You're limited by distance you can swim. And as we discussed, a lot of people aren't strong swimmers here.

So there's been a lot of fishing pressure on very local reefs. So within a kilometre really from shore, and the fish that hang out on those reefs are generally herbivorous, so we found that there's a selective fishing pressure on herbivore fish. So by being able to offer the opportunity for fishermen to use a different type of fishing method like kayaking, which enables you to get past the breakers get further out to sea, fish poling line and target pelagic carnivorous fish, like your tuna and your pewter, and your Wahoos and Barracuda and things like that that are much more sustainable and we can address that imbalance. So using the coral reef research with the fisheries research allows us to make changes or like well form projects with the fishing community here to address environmental issues.

So our sustainable fishing project is in conjunction with the Guinjata fishing community and the fishing chief and involves a lot of sustainability workshops, but it also involves fundraising and securing equipment like kayaking equipment, to be able to offer the opportunity for people to fish more sustainably, and the fishermen switch out their other methods of fishing. So that's netting or spear fishing or whatever. And they kayak instead. So you're transitioning through to a more sustainable way of fishing.

And then we have our megafauna surveys. So we're really lucky here we have all of the sexy species of megafaunas, we have whale sharks, we have manta
rays, and we have humpback whales. So with all of them, we're collecting identification data, trying to build an idea of the population here. That means that we can use this as financial incentive for the government to establish a marine protected area, because we can confidently say that we have x many of whichever species and obviously people travel all over the world to dive with these amazing animals. So it's basically a guarantee of source of income for the local community and the government and increasing tourism. So that's really important data we're collecting there too. And we also collect bioacoustics data on humpback whales. We work with a lot of different NGOs around southern Africa. So we're looking at song evolution, and there and essentially the viability of this area as an ecotourism hotspot, which our research is showing very feasible because during whale season, there are so many whales, it's unreal. Like sometimes in the mornings, you can't move the boat that much because there are so many whales when they're sleeping. So yeah, and this is another key area of our research. And also our bioacoustics research allows us to assess noise pollution in the area to.

Then our ocean trash stuff. So this started as our as just beach cleaning as you do, hopefully as environmentally responsible people do. So beach cleaning, and then this turned into a "Okay, we're getting all this trash, we need to log it." And then from there, it turned into "Okay, we know what types of trash we're getting, what can we actually do about this". And so this basically has now turned into a trash management scheme as well as basic research. So again, action being taken from the science. So what we can do is build what we call eco bricks. So it's basically two litre bottles which are thrown out by the resorts here. And we collect the trash, we log it all. Then we cut it up and we clean it and we pack it and we dry it and we pack it into these bricks. Those bricks can then be used in local construction projects. So this scheme has been very successful. We've used over 150 bricks in local construction projects last year alone. Obviously this year has been a bit different with COVID. And we haven't been able to do any because we're not allowed we have Mozambique's been in lockdown since March, so you're not allowed to employ construction workers for the majority of that. And I haven't been able to physically get out myself and do all of the data and trash management that we would like to do. But nonetheless, this is another very important area of research and we're always looking to expand projects, so next year we're looking at expanding our ocean trash research into water column ocean trash research and relating that back to our filter feeders.

And then our teaching and painting services, our educational outreach that I mentioned earlier. So basically, with the educational outreach, we work with 10 to 13 year olds, and we work with adults too. So we part of our deal with the local community is that we will also help construct classrooms. So the local government agreed that if we could get each of the schools that we work at, we work at two schools, Guinjata, and Paindane. If we can get each of those schools up to 10 classrooms each, then the government would make the third school in the area, which has already got 10 classrooms into the first ever high school, one of Guinjata or Paindane into the first the whole secondary school for the whole area, and then the other one as primary school for the whole area. So the creation of the high, of the high school means that that's education up to the age of 18 for everyone in the area, which has never happened before. So it's really, really, really exciting. And it also our construction work and commitment to maintenance of the classrooms means that schools have been able to stop charging parents for kids to go. So we've essentially sponsored 1500 kids free education, there's about 900 kids at Paindane school and about 600 at Guinjata, which I know I said we're getting each school up to 10 classrooms. So obviously, resources are lacking hugely in the education space in this area. And that's something that we're working on. Obviously,
with education levels increasing, you get decreased poverty, and with decreased poverty, you get increased conservation, people have the financial luxury to think more about conservation. So poverty alleviation and successful conservation strategies are intrinsically linked. So whenever you think of conservation, you also need to think of the human population in the area that you're thinking of, and how they're dealing with things.

And so yeah, we work with the active fishermen as well running sustainability workshops, too. And then our swimming lessons as well. We run on weekends, and we have intensive swimming lessons in August holidays, which is winter holidays here. We have two weeks off, and we teach the kids all day every day about 200 kids over two weeks. A zero to hero course on swimming. So this is aimed at reducing fear in the ocean. It's also aimed at reducing drownings. So we've had 13 drownings over the last two years in this area. So we're trying to reduce that and in our lessons part of our syllabus is talking about riptides and water safety. So this ties into this quite nicely. So we're partnered with Swim Tayka which is a charity and Zoggs and STA, STA are like the qualifying board for swimming qualifications in the UK. And they sponsor us qualifications for out here too. And this is the first ever swimming initiative in the area all of our work it's the first time it's ever been done, which is exciting and daunting in equal measures. So we do teach some adult swimming lessons, especially with the fishermen as well, because obviously if people are spearfishing, things like that they need to be able to swim safely. But we do predominately teach four to 18 year olds, quite often, obviously, the COVID things have changed a little bit. And we don't know what this will look like going forward, we imagine it will probably be a socially distanced version of swimming.

But luckily, we've managed to secure money, enough money to build a community pool. And before this photo is in a resort pool, which we're incredibly grateful that they let us use the pool, free of charge. But having, you have to drive quite a long way and you have to pack the kids on a truck. And I can only fit 40 kids on a truck with me. So by being able to build a pool in the community, it means that kids can actually walk to lessons themselves, we can get through a lot more kids. But we can also do socially distanced lessons and not worry so much about lots of kids together in the pool.

So just a quick one on our impact so far, I'm conscious that I've spoken for 20 minutes already. And so this is just basically talking about what we've done. So I founded the organisation in November 2014. And then we started working properly on the ground in 2015. So we've been working for about five seasons. And this is just our impact that we've had. So over 1150 kids have been taught the basics about the oceans. 14 more classrooms are available to teach in. And as I said previously, that means that the first ever high school in the area can be established. We're working on that with the government at the moment around teacher allocation, and logistics for that. Over 1500 kids have access to free education now. And there's been a large financial injection into the local economy. So the construction of the classrooms we employ local builders for and we fundraise for that internationally so that money has gone directly into job creation in the area.

Our whale research so we're in the middle of publishing a paper on cultural transmission through vocalisations around southern Africa, and also song evolution of humpback whales. And this allows us to study pods. And really in here, it should be megafauna as well. So we've started an adopt a whaleshark scheme, we've ID'ed lots of whalesharks in the area and we're beginning to understand the populations of whale sharks, manta rays, and
humpback whales a lot more here. We are also just about to expand into dolphin research in conjunction with a research centre further down south in Mozambique too, so watch this space for that, if you like dolphins.

Our fisheries research, so we've got over six years of seasonal fisheries data. It's the longest data set on fisheries in Mozambique that we know of. We have launched our sustainable fishing project, which I've told you about already. And the fishermen have also completely given up gill netting courtesy of our work and our sustainability workshops on this sustainable fishing project. So working with the fishermen is SO integral in conservation. And the fishermen also voluntarily take part in our sustainability workshops, which is obviously really nice that everyone can work together.

So ocean trash stuff, we've removed over a tonne of trash from the beaches, and we've begun assessments on what that is we've also removed large ghost nets and as I said before over 150 bricks, eco bricks have been used in local construction projects.

Our coral reef research we're partnered with Leeds and that project is underway. It's a five year project. And that has also the potential depending on the results for coral propagation project like a coral gardening project afterwards as well. So yeah, lots of future potential there. And the coral reef research, as I discussed before, with the fisheries research has informed our sustainable fishing project, and local government and all kinds of stuff.

Then our swimming lessons over 800 kids have attended our swimming lessons. And we've qualified the first ever Mozambique STA swimming instructor and six STA aquatic helpers too. And we've also managed to raise enough money for our community pool. So I think the next slide is actually yeah, talking about that a bit more.

So we were very lucky. Last year, we were recognised as a one of 15 Global grassroots forces for change by Megan and Harry. And Megan donated a lot of money to our community fundraiser to build the community pool. We haven't been able to actually build that yet, because of COVID. But we are hopeful that we'll be able to build that early next year, what we don't want to do is, first of all, if we built it, there would have been a possible or not really, maybe an opportunity have built it pre COVID and rushed it all through, but it would have burnt a hole in our pocket with no one actually being able to use it because Mozambique went into lockdown. And obviously with COVID we don't know what's happening with you know, second waves and things. So we're waiting for things to settle down a bit until we can actually legally do swimming lessons. And so we are waiting for that to happen.

And also we work with Mission Blue, which is Sylvia Earle's organisation and Sylvia Earle has personally backed our project. So this kind of media attention, if you're interested in the NGO space, you can shoot me a message. But this kind of media attention is really important for securing sponsors, going forward building Instagram followers, which again is important for securing sponsors, whether that be equipment or financial, business, commercial, all of that kind of stuff. And it's obviously just lends you legitimacy as well.

And in terms of the actual data that we collect. And so with our fisheries data, we collect the species sex, IDs, precaudal fork total length, all the different types of lengths, weights, locations, and we also collect vertebrae, because with sharks, if you collect shark vertebrae, you can actually age the shark using the shark vertebrae it is similar to cutting
down a tree and seeing the growth rings. Obviously, we're not fishing those animals ourselves, that's opportunistic sampling. So when sharks or any other kind of animal are caught in local fisheries, that's the data that we're collecting.

As I mentioned, with our coral reef research, we're looking at coral coverage and we're also looking at associated reef species. We're expanding next year into nudibranchs a bit more as well. Little sea slugs. And we keep all of that footage. It's all filmed on GoPros so that we can go back and reuse it if we want to and relog for instance, with like indicator species.

Then our megafauna as I said, we're looking at identification so that's photo IDs, citing behaviour, that kind of thing. Then we're also looking at vocalisations and location all the normal stuff as well. Then our ocean trash, we're looking at composition type weight and brands as well that are involved. We do a lot of naming and shaming on our social media. I'm sure you guys are familiar with the normal culprits, for ocean trash stuff. Washing up on the beaches, I think it's the same, same companies all over the world unfortunately. And yeah, so that's what we're looking at and plastic type, which you can tell by the triangle that you get on the bottom of plastic bottles and plastic items. There's a triangle with a number in the middle triangle of arrows, and that will tell you type of plastic, which is just interesting to note.

So if you'd like to get involved in what we do, we're always looking for supporters, so you can volunteer, we take people out here. So everything that I've talked about, obviously, we're a tiny organisation, so like myself Andrea and Pascoal couldn't do all of that on our own. So we are reliant on volunteers to come out and help us so please do get in contact if you do want to come out and help. And you can also donate. So lovetheoceans.org/donate, you can donate or if you run a business, you can partner with us, that can be corporate sponsorship, or commercial, it doesn't matter. And you can also adopt a whale shark which is a fun thing for birthdays or presents. But it really really helps our research. Because it allows us to get like new equipment for the whale shark research like a camera and allows us to function.

You can fundraise. If you'd like to do that you can get you can get in contact with me and I'll help you. You can buy merchandise. So you can go on our teemill store, which is lovetheoceans.teemill.com, and you can buy some ocean themed merchandise. And we'll also be having a Christmas jumper coming out soon. So keep an eye out for that if you'd like a marine themed Christmas jumper. And you can also become an ambassador for us a student ambassador and do talks at different events, fairs, universities, schools, all that kind of stuff. So do reach out if you're interested in that.

And then yeah, that's so if you can follow us on social media, we'd really appreciate it. We are trying to build our presence, so that we can secure better funding and things like that. I'm just going to stop the sharing now. So you can reach us on our website, which is lovetheoceans.org our Instagram, Facebook, Twitter, YouTube, that's all @lovetheoceans. So you can reach us there. And yeah, we're running a Q&A series at the moment with some really interesting guests. So if you want to hear from other conservationists as well, and ask your own questions, then you can through that series too. So thank you for watching. And please drop any questions that you have in the comments. or shoot us a you can just message us on Instagram with any messages, questions that you have too.

Awesome. Thank you