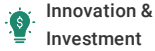




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Innovation &  
Investment

## Aquaculture Exchange: Carsten Krome, Alimentos Ventures

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By James Wright

### Founder of new aquaculture business accelerator discusses knowledge gaps, innovation and opportunities in health and nutrition



Carsten Krome, Ph.D., Alimentos Ventures

He says he never meant to be a scientist, but Carsten Krome's thirst for knowledge and fascination with fish made an education and a career in marine biology a natural path to follow. He also simply thought that fish were, well, cool.

"Fish *are* cool, in many ways, because there are still new species to be found, and there's still not much known about them," he told the *Global Aquaculture Advocate*. "There's like 30,000 bony fish species out there, which is quite impressive."

After earning a Ph.D. in feed science from the University of Stirling in Scotland, Krome spent the past few years as a technical analyst with Dutch investment firm Aqua-Spark, an active investor in the aquaculture space. It was there that the native German learned about the finance world, getting introduced to many different business models in and around aquaculture and around feed and health technologies. In vetting the various businesses for Aqua-Spark, he discovered that many weren't quite ready for prime time, to woo institutional investors and make a strong pitch that could result in a new growth trajectory. But these businesses, he said, still had value.

Krome now seeks to maximize their value through Alimentos Ventures, which is on the hunt for more businesses involved in fish nutrition, health technology and genetics. Alimentos, said Krome, is a business accelerator – commonplace in industries like tech – that aims to help small businesses grow and ready themselves to capitalize on investment opportunities. The next buzzworthy fish start-up coming through the pipeline just might have gotten the boost they needed from Alimentos Ventures.

**There's so much interest now in food – where it comes from and how it's made. Traditionally, aquaculture hasn't been terribly attractive to young students. But with this groundswell of interest in food and food systems, does a career in aquaculture hold greater?**

I certainly think so. I studied marine biology and if marine biology is seen as an unpopular master's to be doing, it's certainly because of job reasons. The thing is, you don't really learn the science; you learn a little bit about lots of different sciences. You get left with everything and nothing at the same time. And aquaculture is just one discipline in marine biology. It is a very recent industry, as you know. Industrial development of aquaculture is, what, only 25 years old in the Western Hemisphere? You have to give it some time. With more industrialism around it and professionalism, there's a need for more recruitment in terms of students and the jobs they'll be taking.

**How do Germans view farmed fish? A negative documentary aired in Germany about pangasius a few years ago (Das Erste: "The Pangasius Lie," on the German TV channel NDR). Does media influence popular opinion in Germany as it does in the United States?**

To be honest, I don't remember that documentary. In Germany, this whole movement about where food comes from and how it is produced really exists, no doubt about it. With regards to aquaculture, I think, its reputation in Europe and Germany isn't as bad as it is in the U.S. And I think rightfully so, obviously. People here don't differentiate as much, between aquaculture and wild-caught. They don't ask for it in supermarkets or restaurants. It's not considered bad to have farmed fish at all. I think, depending on where you go in Europe, it may be different but it's nowhere near as bad as it is in the States.

**Why is that, and how can we change those perceptions?**

I can imagine that you can write a lot of bad stuff about pangasius aquaculture, shrimp aquaculture, all sorts of marine species that do have a certain nutrient discharge in the water and a certain footprint. These comparisons have been made over and over again, which is why I don't understand why the reputation is so bad – if you compare aquaculture to other industries, there's nothing that much worse. And whatever might be a little bit worse – maybe

antibiotics use and such – that, in my opinion, balances out with the fact that you have the lowest feed-conversion ratio of all animals raised; the lowest water consumption; the lowest carbon footprint, by far. All these things considered, I see no justification why aquaculture has earned such a bad reputation.

***I saw a gap between where the financial world wants to come in, the professional investors, and where the aquaculture industry is at the moment. There is innovation, it's just not presented correctly.***

It could have to do with lack of professionalism in the industry. If you look at the salmon aquaculture in Norway, people have written bad things about it, but it's not a bad industry. It's done quite alright. The Norwegian government has implemented rule sets where, if your effluent water has too many nutrients and you have an impact on the sea floor, you have to stop farming immediately. They have regulations in place to make sure these things don't happen. Antibiotics are only used in the event of disease. However, certainly in Southeast Asia, with [smaller-scale] farmers, you may get more abuse of antibiotics and certain non-best practices.

**Do you think the lack of government support, or the difficult permitting system just to get a business started, has impacted consumers' negative perceptions?**

It may have something to do with it. But that'll change, because, again, it's a new industry. It's being industrialized and controlled more as we speak.

**Is aquaculture a difficult industry to get started in, as an entrepreneur? As an investor?**

Yes, very much so. You run into a lot of issues all the time. Farming is one part of aquaculture, but it's certainly not the central part of what Alimentos is doing. If by aquaculture, you mean farming, yes, it's very difficult, and you are up against different problems all the time. If you're farming a new species, reproductive biology and disease are the main issues. If you're farming with a new technology, then production costs and therefore markets become an issue. This is true for the entrepreneur as much as it is for the investor, because the challenges are essentially the same. Fish farmers in the Mediterranean, for example, include a complete loss of production every seven years due to disease in their projections. If you do this as an investor, it becomes challenging to model good returns. I have not only experienced this as a prawn farmer but also as an investor or in former jobs, as have the network of people I speak to. Alimentos has decided to keep farming part a very small part of its operations and focus more on the improvement of the nutrition, health, technology and genetics aspects that contribute to the farming itself, and improve its efficiency and success.

**Tell me about your portfolio, or the projects you are working on at the start.**

They're all in the making. We've just started in July. We are essentially looking into five different opportunities at the moment. Two of them are feed ingredients, one is a protein, one is an oil source. Then we are looking at two health companies. We are also looking to set up a formalized, institutionalized accelerator in the aquaculture world. A business accelerator for aquaculture. At the moment, we don't have the physical facilities where startups could come get office space, get lab space, get mentoring, access to funding, strategy advice and investor relations. We are in conversations with a couple of institutes and R&D companies to set that up.

Business accelerators already exist in other industries. In tech, all you need is an office and a laptop. For aquaculture, it's obviously a bit more difficult to set up. We are looking into how to optimize that for aquaculture. We already have the know-how, the team, the network of investors, and we have our own funding. We have a bit of a pipeline of startups that could come and do the program. We're essentially all set. Now it's just a matter of finding adequate facilities.

**Where might these facilities be?**

Probably in Europe. It's easiest for us, but there's also one party we're talking to in Southeast Asia. But the startups could come from all over the world, and facilities should provide for research on many different species.

**Most aquaculture investments have a long-term view. I assume that investors in the aquaculture space need patience. What other attributes will suit them well?**

Patience already gives a good indication around the main attributes you need, not just during the investment but before, in setting up a deal. Three years ago when I changed from science to the financial industry, I didn't expect things to take so long. Not just during my time with Aqua-Spark but also here, things move so slowly. No deadline is ever met. It's just something you need to get used to.

So what other attributes do you need besides patience? I guess you need to be well networked and you need to make sure that at the moment you make an investment, you already have a clear strategy set up, either for the next financing round or whatever comes after. That's part of the reason why it takes so long. From the entrepreneur, you need things in place, and sometimes when they approach you they don't have it yet. So you sit down and discuss these things, and that takes time. Back to patience.

***I see a flourishing industry. The numbers prove that.***

Tell me about your time at Aqua-Spark and what you did with **Mike Velings** ([https://www.aquaculturealliance.org/advocate/aquaculture-exchange-mike-velings-aqua-spark/?\\_hstc=236403678.201747928258e6df19a09ab79b2f78da.1680950255668.1680950255668.1680950255668.1&\\_hssc=236403678.1.1680950255669&\\_hsf](https://www.aquaculturealliance.org/advocate/aquaculture-exchange-mike-velings-aqua-spark/?_hstc=236403678.201747928258e6df19a09ab79b2f78da.1680950255668.1680950255668.1680950255668.1&_hssc=236403678.1.1680950255669&_hsf)) and Amy Novogratz.

I was introduced to them by **[Professor] Dave Little at Stirling** ([https://www.aquaculturealliance.org/advocate/aquaculture-exchange-david-little-university-of-stirling/?\\_hstc=236403678.201747928258e6df19a09ab79b2f78da.1680950255668.1680950255668.1680950255668.1&\\_hssc=236403678.1.1680950255669&\\_hsf](https://www.aquaculturealliance.org/advocate/aquaculture-exchange-david-little-university-of-stirling/?_hstc=236403678.201747928258e6df19a09ab79b2f78da.1680950255668.1680950255668.1680950255668.1&_hssc=236403678.1.1680950255669&_hsf)) I wasn't quite finished with my Ph.D. at the time, and I was talking to another investment office, which would have taken me to Dubai. So, he said talk to these guys, they're close by and you can come to Stirling if you need to do some work here. I just reached out to Mike and I said, "Let me come work for three months for free. Then you can decide whether you want to take me on or not." I did that and in hindsight it was one of the best decisions I've ever made.

There was a lack of knowledge around aquaculture when I showed up there in March 2014 and I could provide that. But at the same time I learned a lot about finance, which for me was great. I looked at over 400 business plans. Aqua-Spark has a big name in the industry, and a lot of companies applied for funding, so I got to see a lot of businesses. My role was to screen these businesses from a technological perspective and be the initial point of contact. It became more than just the technological side relatively quickly, and I was in charge of the deal flow.

The other nice thing is it was still a startup, with not much manpower. It was not like working at some big investment bank where you only work on certain parts of the deal and 10 people work on the other parts. From the initial contact with companies to writing a shareholder's agreements from scratch, I did all of these things. I'm really thankful for having been a part of that. Mike and Amy give you a lot of responsibility very quickly and put a lot of trust in you. That's something that makes you learn very fast and brings out the best in you.

**Mike has said that aquaculture, when he first looked at the industry, lacked innovation. Do you agree with that?**

Such a tough question because I don't know the amount of innovation happening in other industries, except for maybe tech. In tech, there's so much innovation, and so much stuff that gets discarded, it's of no use, and it fails. In aquaculture, I think there needs to be more innovation but I look at the reason why I started Alimentos Ventures: It was when I realized that a lot of deal flow came into Aqua-Spark that I was taking care of, but I dismissed it if the business was not at the stage where Aqua-Spark was able to make an investment. Either the team was not complete, or the product was not proven yet, at least no commercial proof of concept. But lots of these businesses I really liked and I wanted to get actively involved.

***The investment world is closely connected, and if you waste millions and millions in recirculation aquaculture, for example, which has not proven yet to be commercially viable, then there's a mistake being made.***

I saw a gap between where the financial world wants to come in, the professional investors, and where the aquaculture industry is at the moment. There is innovation, it's just not presented correctly. Again the comparison to tech: Everybody in technology knows how to present themselves, how to pitch, who to talk to and how to speak to investors. That's something that fish farmers and scientists often don't know. But it doesn't mean they have a bad product. We try to make these often complex innovations sound simple to the investment world, because we understand them and we know what investors focus on.

**What are the goals for Alimentos? How is the company different from Aqua-Spark?**

We are not competing; we have a bit of overlap, I suppose, but it's minimal. We go in at an earlier stage. We are really what you call an accelerator. We take early-stage businesses that have very little or no revenue and we complement their teams, make a little investment, and help grow the businesses for say, two years, until they get ready to take on institutional investors like Aqua-Spark. We go to universities and institutes and ask them if they have commercial technologies in the aquaculture space, or technologies with commercial potential. "If you do, come talk to us. We implement a team, give you some seed funding, and on we go." A business accelerator is another way of formalizing that relationship that we would have with these early-stage businesses. Then a business like Aqua-Spark goes in, usually after commercial proof of concept.

**They're looking for a more finished product?**

Exactly. I understand institutional investors in that sense because they need to de-risk themselves as much as possible. Our returns will be higher if it works out – higher risk, higher returns.

#### **What's something you learned from your time at Aqua-Spark that you'll be 'taking with you' in your new venture?**

I'm taking a lot with me. The atmosphere is very compassionate and family-like. I'm looking to implement this in Alimentos. Because there's no reason why you have to be a tough guy to run a business. You have to be tough in negotiations, but it's also about having fun and having a good time. This is what Aqua-Spark does very well.

Professionally speaking, the experience when it comes to diligence-ing an idea from A to Z, the good overview that Aqua-Spark gave me on the industry – how else would you know that, unless you work for an institutional investor like Aqua-Spark, which has so many different companies in line? There's no way. You can do all the Google searches you want – you won't find those businesses.

#### **Are you seeking to invest solely in aquaculture or perhaps spread out into other industries? Or all food, as the Spanish name suggests?**

[Alimentos] means nutrition, but maybe it also means food. Whatever! Yes. It'll be aquaculture. We'll be staying away from farming, to a large extent, at least fish and shrimp farming. But we are really focusing on innovations in health and feed. This is what I have identified as the most interesting opportunity, for us.

#### **The researchers at the University of Stirling, who did the nutritional-profile analysis of farmed fish raised on diets containing decreasing amounts of fishmeal and fish oil, found that the products we eat offer fewer omega-3 fatty acids than before, about half. What are your thoughts on the new aquafeeds and how we supply omega-3s?**

When fishmeal and fish oil are reduced more and more, and replaced by plant oil, from a product quality point of view, it's an issue. The protein structure of fish is genetically predetermined, so you will always have a characteristic amino acid composition at the end depending on the species. From an oil point of view, it depends on what is put in the feed. Fish, only to a small extent, produce omega-3s themselves. They are being produced by marine algae. If you don't put those omega-3s in feed, you end up with a less nutritious fish. That's certainly an issue from a consumer perspective. This is, in my eyes, one of the biggest challenges the industry is facing – coming up with a cost-effective source of omega-3s oils. There is innovation in that space as well, and we're looking into it.

#### **One reason why the aquaculture industry does not attract many investors is a lack of trustworthy data and information. Do you share this concern?**

The sources I get my information from are mostly scientific papers and I speak to people in the industry – corporate and people who are good in a specific discipline. The problem with the financial world, oftentimes, is they don't even know who to ask. You need the right questions in order for the answers to be able to give you any good information. That's where we want to step in. We have a bottom-up approach where we go into detail first with a piece of innovation and then make the opportunity understandable to investors. One of our business goals is investing in incubation capital and fulfilling the role of a business accelerator. But we can also advise investors who want to enter the space of aquaculture or syndicate investments – it's all intertwined in a way.

#### **We ask our GOAL audience each year to identify the industry's greatest challenge. Usually they say it's controlling diseases. Others say it's lack of investment, or feed sustainability, or environmental impacts, and others still say the generally negative consumer perception of the industry. What do you think it is, and how to best address it?**

I see a flourishing industry. The numbers prove that. We discussed the gap between innovation and capital. That is a big challenge, and it's not a resource challenge, like feed or a production challenge like disease. It's where do I focus on as an investor? The investment world is closely connected, and if you waste millions and millions in recirculation aquaculture, for example, which has not proven yet to be commercially viable, then there's a mistake being made. And that's not good for the industry as a whole, because investors will not fund new projects in aquaculture, because they will have been burned before. It's important to make sure that capital is put down in the right way. That's in everyone's interest, at the end of the day.

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