If there’s anything you learn from working in the aquaculture industry, it’s that it is a sea of personalities. And in an industry where research and science still plays as important a role as marketing and sales; and where environment, politics and social whims can make or break a company, the people leading it are key.

This level of diversity also brings a raft of different characters with incredibly different backgrounds as FFI discovered...

FFI finds out who is shaping the aquaculture industry of tomorrow and what makes them show up to work each day

Rijuta Dey
Andy McNicoll
Rachel Mutter

The people behind the fish
BRAZIL’S SHRIMP CHAMPION

Itamar de Paiva Rocha, President, Brazilian Shrimp Farmers’ Association

is where Brazil is being held back. “In Brazil, if you don’t get a license you don’t get money from any project.”

“Most of the freshwater fish have no license; many small shrimp farms are not licensed. In 2010, we imported more than $1 billion worth of seafood, and the government paid fishermen about $700 million to stay at home!”

Rocha points out that big companies won’t invest unless there are licenses attached to the business.

“We have to fight more and more, and find a way to develop,” de Paiva Rocha tells FFI.

All the aquaculture countries in the world, no one has the potential of Brazil

potential of Brazil, no one has the climate conditions and location of Brazil, as we are close to the U.S. and European market. But we have very difficult people to work with.”

Brazil aims to produce more than 1 million metric tons of farmed seafood by 2015, and to hit the 10 million mark by 2020.

Roughly 300,000 metric tons of aquaculture product is farmed in Brazil annually, which is just 10 percent of what Vietnam produces, “though we have 10 times the fresh water reserves of Vietnam,” Rocha points out.

For the past decade, the BRIC countries have analyzed and economists twisted in excitement every time any discussion on global commerce needs a monthly sound byte. But the facts of Brazil’s natural abundance are truly impressive: Brazil has 13 percent of the world’s freshwater reserves, 10 million hectares of freshwater reserves, a long coastline, and a climate

“Of all the aquaculture countries in the world, no one has the potential of Brazil.”

Back in the 1980s, 20-year-old Frenchman Arnault Chaperon was offered the chance to enter fish farming - at the time a small industry. Thirty years on and Chaperon is President of the European Federation of Aquaculture Producers (FEAP), a body representing the continent’s fish farmers who produce a

fourth of Europe’s fish.

“Over the last thirty years we have been labeled with this image of producing artificial fish which isn’t fair,” he says. “I have a passion to be on the sea, I love sailing and windsurfing. So when I was 20, the chance to work in the fish farming sector was a fantastic opportunity,” he says. “At that period the development of the sector was very little. It has been great to be part of its growth since then. We’ve arrived at a stage now that we want aquaculture to be a strong pillar of the development of Europe’s fisheries and agriculture sector.”

But we have very difficult people to work with

combined 1.8 million metric tons of fish every year. Looking back, Chaperon is glad he grasped the opportunity to enter aquaculture.

“I have a passion to be on the sea, I love sailing and windsurfing. So when I was 20, the chance to work in the fish farming sector was a fantastic opportunity,” he says. “At that period the development of the sector was very little. It has been great to be part of its growth since then. We’ve arrived at a stage now that we want aquaculture to be a strong pillar of the development of Europe’s fisheries and agriculture sector.”

suitable for year-round farming. “Why are we not developing our potential, why?” Brazil’s biggest aquaculture enthusiast asks. “In some states in Brazil, no one has license to farm at all.”

But it is not all doom and gloom for Rocha. He has great hopes from the aquaculture show - the world’s biggest - to be held this month in Natal.

“We are working very hard for the show - it will be a very good opportunity for Brazil,” he said. “We are very encouraged by the fish minister and the governor, which is a new development.”

“We are looking forward to aquaculture partnerships out of the show and I think it will be a success. The show is very bright for Brazil and aquaculture.”

And maybe, with the passion and drive of people like de Paiva Rocha, Brazilian aquaculture will indeed have a bright future.

want to propose some new questions and areas of discussion.”

This is part of FEAP’s new ambitious plan to drive more productive communications from Europe’s fish farmers. Chaperon says that engaging with stakeholders is crucial if aquaculture is to correct some of what FEAP tells are misleading messages about fish farming.

“Over the last thirty years we have been labeled with this image of us producing ‘artificial fish’ which isn’t fair,” he says. “The consumer doesn’t have this mindset about other farmed products like poultry or pork. So we have to explain better what we do and have real transparency for the consumers.”

Another area Chaperon is keen to address is the claims made about the fish in/fish out (IFO) ratio of Europe’s aquaculture providers. Critics say that fish farming is unsustainable as it requires 4 kilos of white fish to produce one of farmed fish. Chaperon says that FEAP is working on producing authorative research on the matter in order to provide a solid basis for discussions on the issue.

“We are producing a research paper and will work on it with researchers, consumers, NGOs and other stakeholders. We will distribute the information to everybody, to make sure that everyone can work from the same numbers,” he says.

“Going forward, Chaperon says the biggest challenge facing FEAP is in addressing what he feels is an “unlevel playing field” between European producers and non-EU countries that don’t have the same level of regulations, such as Vietnam.

“We want to correct this aspect because it is not fair that we are competing with markets that don’t have the same rules and also that we are having to export into Europe,” he says. "For example, in Europe we have stricter government regulation, we pay higher wages, but it is not the same in Vietnam.

No matter what challenges await Europe’s fish farmers, Chaperon says he will keep his philosophy of doing business in mind: “the most important thing, always, is remembering that the market is king.”

A FORCE OF NATURE

Bill Martin, president, Blue Ridge Aquaculture

Bill Martin believes in moving forward and leaning from past mistakes. He believes in going against the grain and taking the plunge into alien waters. He believes in “fattish” fish, sustainable food sourcing and in company loyalty. At least that is what FFI gleaned from his thoroughly engaging chat with the president of the world’s largest indoor producer of tilapia.

“I got into aquaculture when I was living in Tennessee and I caught fish to raise in ponds, and I felt there had to be a better way to do things,” Martin says. “That’s how I started FFI.”

“There were just too many things against pond aquaculture, like the weather changes etcetera.”

The genesis of Martin’s aquaculture business came upon reading “with great interest” an article that talked about recirculating aquaculture written by Dr. George Libey, who was then working at Purdue.

He flew to Purdue with engineers from Virginia Tech University, interviewed Libey and looked through the recirculating system. The project was on when local government loaned several million dollars to Virginia tech to begin an aquaculture program. However, this was shelved.

“We failed, not because of the catfish but because of a systems fault,” he said. “We rested for a year or so and then began with tilapia. In the interim we had grown tropical fish, larger feed fish like catfish, tilapia.”

And Martin has moved forward and have been uninterrupted since.

Martin is unflinching in his criticism of feed companies, most of whom he says pushes quantity at the cost of quality. “Quite frankly feed is the embarrassment of our industry, the biggest deterrent to the future of the aquaculture industry.” he tells FFI.

“Everybody is tired of buying the junk that goes into feed. Ultimately, I think the feed industry will clean itself up, but
Thierry Chopin is an unusual breed. Despite his deep-rooted background in science and research he has an acute awareness that without application, science is worthless.” As Professor of Marine Biology at New Brunswick University, Chopin has been instrumental in bringing the concept of integrated multi-trophic aquaculture (IMTA) to the commercial sector’s attention and is currently working with north America’s biggest salmon farmer to produce IMTA salmon for Canada’s biggest food distributor.

When you ask Chopin about the journey to get the concept of IMTA to commercial acceptance, he laughs and remarks how long the road was. “For me it is more than biology, it’s also economics.”

“From the beginning, I have been looking at what can be done from one liquid to another. In a way my training as a biologists is still there,” he says.

The social aspect of his work is also important to him. "For me [IMTA] is about improving practices in aquaculture. For me, it’s about doing it right – I enjoy doing science relevant to society.”

Original from the Beaujolais wine-making region of France, Chopin describes himself as having moved “from one liquid to another”. Following his passion for the sea, Chopin moved to Brest to study phyology – the study of seaweed – later moving to a federal laboratory in Halifax, Canada as part of his national service. There he met his future wife, did a post-doctorate in Florida and moved back to France for years before a post came up at the University of New Brunswick in 1989. The rest, as they say, is history.

It’s been a long journey, but according to Chopin “if I can improve aquaculture practices long term, then it’s all worth it.”

Chopin tells FFI. “Almost 40 percent of our tilapia diets are fish meal. It is too expensive.”

Now Russian Sea plans to invest up to RUB 3 billion ($90 million/€75 million) in developing salmon farming in the Murmansk region of north-west Russia, where the potential farming volume is over 30,000 metric tons, representing around 35 percent of total Russian import volumes. As the Russian market is number three behind France and Poland for Norwegian salmon farms, it would mean significant changes in the current trading model if the Russian farms reach their full potential. It is a new and extremely high density and our production rate that we are taking now. “We use no fishmeal in any of our tilapia diets as we don’t believe that if you use any fish meal you are sustainable,” he tells FII. 

The American grower also stresses that fish farmers cannot rely on fishmeal for fish diets in the same degree as they do now. “We use no fishmeal in any of our tilapia diets as we don’t believe that if you use any fish meal you are sustainable,” he tells FII. 

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IMTA – THE SHORT VERSION

“I call it the turquoise revolution,” Chopin tells FII. “On land we’ve had the green revolution, then came the blue revolution with aquaculture, but now we have to make the blue revolution greener.”

On a basic level Integrated Multi-Trophic Aquaculture recreates the natural environment by farming species on different trophic levels together. In the Bay of Fundy, Chopin is helping Cooke Aquaculture to farm Atlantic salmon alongside seaweeds and mussels, all for commercial sale.

They have a long way to go.”

Martin raves off his company facts with pride – “The mortality rate of our tilapia is less than 2 percent,” Martin says. “We operate out of an 80,000 square feet building, producing 4.2 million pounds (1,905 metric tons) of live weight tilapia – which is unbelievable. It’s extremely high density and our fish are very happy.”

Talking about the future, Martin believes that indoor recirculating aquaculture will lead the way. “The U.S. investment community hasn’t realized this as yet but the Europeans are on fire about recirculating aquaculture - they want it everywhere,” he says. “I have been contacted by virtually every country in Europe as they see the future. The United States does not see this as yet, which is unfortunate.”

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More than 80 percent of the salmon industry had been going for 20-25 years and no one could understand why the model needed improving.

“we had to convince them it was worth it and for this, we had to put a financial value on the model.” Regulations have also hampered IMTA’s progress. The existing legal framework in Canada said that a 125 meter distance must be put between any farmed species. It was built on experience in the agricultural industry and took Chopin and his team four years to have changed – a frustratingly long process for Chopin, but apparently a remarkably speedy turnaround in terms of the regulatory sector, Chopin tells FII.

Chopin says the interdisciplinary aspect, of what he does is what he loves. “For me it is more than biology, it’s also economics,” he says.

The social outreach that his work is also important to him. “For me [IMTA] is about improving practices in aquaculture. For me, it’s about doing it right – I enjoy doing science relevant to society.”

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The beauty of the system is that it can potentially mitigate the environmental impacts of commercial fish farming by cultivating fed species with extractive ones. This utilizes the inorganic and organic wastes from aquaculture and simultaneously growing other products. “Some of the externalities of fed monoculture are internalized, increasing the overall sustainability and longterm profitability of aquaculture farms," says Chopin.

There are also biological advantages. Through their trials, Chopin and his team have found that mussels can filter the infectious salmon anaemia (ISA) virus and the early stage of sea lice, thereby destroying them. Cooke is also doing some feed trials with the seaweed it is growing.
The XX factor
Aquaculture is still a male dominated industry, especially in the upper echelons, but women are making increasing headway. Greek seabass and seabream farmer Lara Barazi-Yeroulanos and Belize shrimp farmer Linda Thornton are two such women.

LARA BARAZI-YEROULANOS
Lara Barazi-Yeroulanos, CEO, Kefalonia Fisheries, Greece

One of the leading lights of Greek aquaculture, Lara Barazi-Yeroulanos swapped the Manhattan trading floor for Mediterranean bass and bream farming. Barazi-Yeroulanos, CEO of Kefalonia fisheries, made the journey from Manhattan’s trading floors to Mediterranean aquaculture in 1998 after marrying into the Yeroulanos family – founders of Kefalonia, Greece’s oldest seabass and seabream producer after being set up in 1982. “I came into this world by accident I guess,” she laughs.

It may have been a chance opportunity, but Barazi-Yeroulanos’s background meant she was well equipped to take the reins. An economist by trade, she studied agricultural economics at Columbia University and international trade and finance at Harvard before moving into the derivatives trading market in New York, rising to vice-president at Credit Lyonnais. Her finance background armed her with some key skills for her CEO role at Kefalonia’s 100 percent family-owned business which employs 100 staff.

“Talented in aquaculture, I love to sell and have contact with clients. That is my favorite part of what I do,” she says. “I find it gives me the ability to think on my feet and solve problems. That’s essentially what you do when you run an aquaculture business. You’re a problem solver.”

In her 13 years at the helm of Kefalonia, Barazi-Yeroulanos has had plenty of opportunity to put her problem-solving skills to use. She successfully steered her company through the Mediterranean aquaculture market’s meltdowns of 2007, when overproduction, combined with the global economic recession, plunged the industry into crisis, leaving a raft of debt-ridden producers on the brink of collapse.

“We were, I think, very lucky,” she says. “One of the advantages, or disadvantages, of being the oldest company is that we make the same mistakes as everyone else, but we make them a little bit earlier. The advantage of that, for us at least, was that after being highly leveraged in the 1990s, by the time the 2007 crisis arrived, we were actually on a pretty solid footing.”

Since being appointed CEO, Barazi-Yeroulanos has instilled the value of “quality over quantity” in Kefalonia’s corporate culture. Recognizing the growing niche market in organic products, she introduced certified organic production to the company in 2007. It was a move in line with Kefalonia’s longstanding commitment to quality animal husbandry, and organic products now account for one-fifth of the producer’s 1,500 metric ton output. Barazi-Yeroulanos also stresses the benefit of long-term thinking over short-term gain and the value of building longstanding relationships with customers.

“A good partnership with customers means we weather storms together,” she says. “The most valuable thing we get from our relationships with customers is feedback. They have access to our consumers, the people who eat our product. That feedback is really quite an asset because you can detect market trends. You can anticipate potential problems and then you can plan together.”

Looking to the future, Barazi-Yeroulanos thinks coming years will see the raft of research into aquaculture come to fruition with benefits in productivity, profitability and innovation. Yet, she is wary, that the full potential of these developments won’t be realized unless the financial health of the bass and bream industry is stabilized.

“Companies under a lot of financial stress don’t have the clarity of mind to invest in research and innovation. They are in continuous crisis mode and that doesn’t lead to building anything,” she says. “At the moment a lot of companies are wobbling but whoever is in touch with the innovation, the chance to improve marketing and grow markets, could be in a really good place to make money in the next few years.”

LINDA THORNTON
Linda Thornton, Manager, Aqua Mar Beliz Lt., Belize

Linda Thornton has led a remarkable, chequered life. She moved to Belize from her home state of Illinois, United States. Before moving to Belize, she worked at King James Shrimp – the first indoor, re-circulating, artificial seawater shrimp factory in the United States. She began working at Aquamar, the largest shrimp farm in Belize, in 1996, and manages it to date.

She bought her own shrimp farm, Cardelli Farms, when she turned fifty. She is the only woman in Belize – and one of only a few in the world – to own a shrimp farm.

Linda Thornton has led a remarkable, chequered life. She moved to Belize from her home state of Illinois and was told by people at the time that she wouldn’t last a week. That was almost 30 years ago. Her stories are as exotic and compelling as the country where she’s worked, in living in Mexico and Belize, raising pigs as well as shrimp, battling sudden hurricanes and miserly farm bosses. She started as a lab assistant and now manages Aquamar, the biggest shrimp farm in Belize. She is also the first woman to own her own shrimp farm in Belize – Cardelli Farms - a move she describes as a retirement plan.

“I started the shrimp farm five years ago” she tells FFI. I decided that I wanted some income for my older age so I didn’t have any retirement program set up at that time.”

She is modest in describing...
Seeking Sustainability, One Woman at a Time

John Murphy, managing director, Murphy's Irish Seafood, Ireland

John Murphy gained a love of the sea during childhood summer holidays spent learning how to fish and handle a boat with his uncle, on Ireland’s Whiddy Island. The island lies in the bay of Bantry, a town on the coast of County Cork in Ireland, which, since 1984, has been home to John’s aquaculture company, Murphy’s Irish Seafood.

The company, which now has an annual turnover of €5 million (57 million) and employs 35 staff, was started by Murphy after he saw great potential for aquaculture in Ireland while working as a professional diver in the late seventies.

“Back in 1974 I was diving and exporting sea urchins to France and I started hearing about this idea that you could farm in the sea. I thought - this has to be the world’s largest producer of the shellfish. "Ireland has huge potential for customers, and internationally. Murphy will be sure to stay on the "bow" of his company’s portfolio. The farm now produces 500 metric tons of organic salmon. The cultivation proved a sound one - Murphy’s secured a major deal with U.S. high-end retailer Williams Sonoma for about 10 metric tons of salmon per week to the U.S. market, as well as to customers in Hong Kong, Japan, France and Germany.

“At the Brussels seafood show the Russian Seafood Expo, we were looking for our organic salmon was just ridiculous. We could sell three times our production levels,” he says. “In this economic climate, selling is sometimes not the easiest game in the world as people don’t have money to spend, but the organic salmon business is doing incredibly well. Demand is high and prices are strong.”

With growing demand for organic products, Murphy is looking to expand his company’s output in the sector. Murphy’s Irish Seafood has attained a license to set up another salmon farming site with a 3,800 metric ton capacity and has recently started producing organic mussels after being accredited as an organic producer earlier this year. As his business expands, Murphy says he hopes to prove that it is really true to his company’s values of producing high quality products with committed and passionate staff.

“If you can produce and deliver a quality product then you build up a reputation that gets you noticed,” he says. “I have a lot of emotion in what I am doing, the people I work with are passionate about what we are delivering. We all want to make it succeed. There are huge challenges out there but when you are all committed to the product and where it is going then you take these challenges on.”

As for the future of aquaculture, just as when he started up his company back in the early eighties, Murphy still feels that there is a lot of untapped potential for salmon farming remains underutilized.

“Ireland has huge potential for seaweed and new export markets,” Murphy says. “Ireland is the world’s largest producer of the shellfish. Murphy will be sure to stay on the “bow” of his company’s portfolio. The farm now produces 500 metric tons of organic salmon. The cultivation proved a sound one - Murphy’s secured a major deal with U.S. high-end retailer Williams Sonoma for about 10 metric tons of salmon per week to the U.S. market, as well as to customers in Hong Kong, Japan, France and Germany.

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