

Analysis

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Kingdom of Shrimp

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Back in the black?

The Mediterranean seabass and seabream industry has had a rough ride. Those left standing are seeing a gradual return to profitability, but how far off is real stability?

All photos: Velo Mitrovich



AS FAR AS THE EYE CAN SEE: A satellite image of NPC's enormous farm, taking up an area the same size as Bangkok. And expansion is already underway.

Building castles in the sand

Last year's dreams becomes this year's reality for world's largest farm.

Velo Mitrovich

You stand on top of National Prawn Company's (NPC) pump house in Saudi Arabia. Looking straight ahead you see a wide channel cut out, jutting out into the blue, blue Red Sea. Behind you is the start of one



THE MAN IN CHARGE: Ahmad Rasheed Al-Ballaa, Managing Director of National Prawn Company seems to have two abilities that too many in business lack. The first is the realization that he does not have all the answers; the second is to surround himself with those who do.

of several feeder canals of the enormous farm. Under your feet are pumps moving an impressive 70 cubic meters of sea water per second into the farm's water system - soon to be pumping 300 cubic meters a second.

A worker approaches you, M. Naem Khen, who after noticing your camera asks you if you want to see something very impressive nearby. With a huge smile he points at a gray block of concrete, which looks exactly like ... a gray block of concrete.

When you give him a puzzled look, Khen explains that inside the concrete are new pumps. The significance, he explains, is this. If the pumps he maintains break down, the gravity flow water system will cease, oxygen levels in the thousands of hectares of ponds will drop and all the shrimp will die.

What he doesn't add verbally, his facial expression does for him. "I have the most important job at National; all is resting on my shoulders." He's proud of it.

While at any farm it's not unusual to find a few employees with this pride and "big picture" concept, what sets NPC apart is that this is the opposite. Seriously, good luck finding anyone who doesn't share this same attitude and concern, from the managing director down to the lowest rated person on the shrimp processing line.

And, if that isn't amazing

enough, think about this: At NPC there are around 2,500 workers from 26 different countries, speaking 19 different languages. They are there under three-year contracts, working far away from home, family and friends, in what has to be one of the most inhospitable parts of the world, with the majority staying for at least nine years.

Temperatures soar during the summer months to well over 50 deg C. It is impossible not to be focused on the heat if you're not used to it - and it is impossible to see how anyone could be. To add to the misery, sandstorms

'Investment doesn't kill companies, cash flow does'
Ahmad Rasheed Al-Ballaa,
NPC Managing Director

develop like clockwork nearly every afternoon and the ultra-fine sand stings exposed skin and blasts paint off cars. Is winter any better? Don't get any workers talking about winter. While the days are fine, the desert nights are bitterly cold.

So how does the world's largest desert aquaculture project keep morale so high? It all starts with management which, in one of the most conservative nations on Earth, has to be one of the most progressive.

Managing director Ahmad Rasheed Al-Ballaa seems to

have two abilities that too many in business lack. The first is the realization that he does not have all the answers; the second is to surround himself with those who do. His team of management directors include those with aquaculture experience to those whose expertise is far removed from the sea, such as his director for corporate strategy and business development, Dieter Moeller, formerly with IBM Saudi Arabia and Germany.

This team has brought the first phase of the development at NPC to a close, with 10 farms constructed on the site which is 34 times the size of Monaco. Each farm consists of 28-30 ponds, with each pond measuring around 10ha. Every farm has its own quarters for staff and a mosque. Between them

they share a 55,000 metric ton capacity feed mill, a 21.4 megawatt power plant, a fire station with two engines and a fully staffed medical polyclinic.

In what is being called Phase II, but most see as actually just a continuous expansion of NPC, 13 farms of the same size are being constructed, with two of these already growing shrimp. An amberjack recirculation farm is being built with broodstock all ready on site, sea cucumbers are being developed for farming, marine agriculture cultivation has begun, and now a construc-

tion company is being formed to build shrimp farms in other similar locations.

Big dreams

"Did I realize that NPC was going to be this big?" says Al-Ballaa. "Not when I first came here, I didn't see any of this, the size it has become."

He says that in the 1970s his brother travelled to Indonesia and saw a shrimp farm for the first time. To the brother, it seemed like the easiest way in the world to make money. Dig a pond, put in some fry, add a bit of feed and six months later you harvest the shrimp and go to the bank. In 1982 a small shrimp research project was started and when Al-Ballaa finished his engineering degree, he joined.

"For example, we didn't think things through, like the freshwater issue."

The shrimp farms that my brother saw were either fresh or brackish water, nobody was farming shrimp in water as salty as the Red Sea and we thought we could farm the same type of shrimp as the others. This was in the early '80s and one of the ideas we - and others - were thinking in Saudi Arabia was to move icebergs from Antarctica to here to get freshwater.

"It finally dawned on us that we couldn't farm the same species as elsewhere - you can have



TOUGH CONDITIONS: A light dust storm makes driving a challenge; a strong one makes driving an impossibility: it is possible NPC is based in the most inhospitable place on earth

However, before expanding, what the investors were curious about was why aquaculture companies fail. At times, it seems that a search on the Internet finds more aquaculture graveyards than success stories.

"Aquaculture in the desert will always be a challenge, requiring the right amount of investment if you're going to be successful. However, what is the first thing any investor will do? They'll look on the Internet for aquaculture and see nothing but problems - companies collapsing, disease, poor markets, you name it," says Al-Ballaa. "We had to convince our investors we were going to do things differently, but this would require them taking a long term view."

"Aquaculture is a high risk venture - people constantly cut corners and want their investment back as soon as possible, which is why so many companies go out of business. We have

been fortunate that the board has, from the beginning, taken a long-term growth perspective of 20 years: investment doesn't kill companies, cash flow does," says Al-Ballaa. So far around \$350 million has been put into the farm, with another \$250 million scheduled for the next three years.

"My thinking is this: we concentrate on the right investment, then the right people, the right infrastructure, then the right biosecurity, and we will succeed. This is what sustainability is about."

Keeping disease out

NPC's hatchery unit is on a nearby access-controlled island, connected to the farm by a bridge with a 24/7 security post. But located on this island in a corner

by itself is a structure that looks like Fort Knox for shrimp. At the base is a heavy duty black plastic sheet to keep out crabs, then a fence with barbed wire to keep out mammals - both two legged and four legged varieties - and then bird netting on top.

You turn to Pradeep Kumar, the manager of shrimp fry production and ask if you can go inside. The answer is short and simple: "No."

There are no secrets inside the broodstock area;

it's just that NPC takes biosecurity very seriously and nothing is more important to the farm than the health of its broodstock. Still, as aquaculture companies have found around the world, no matter what biosecurity measures you have in place, without

'You can have the right idea but not the right product'
Ahmad Rasheed Al-Ballaa

people supporting them; it's all a pointless exercise.

There are 76 people working on 'Hatchery Island' with the majority from either India or Bangladesh with hatchery experience. Regardless, all personnel go through a continuous training program to make sure they understand fully NPC's way of growing shrimp, which places biosecurity above all.

This method compartmentalizes and isolates each step of fry growth from the next, with even more separation inside each step.

While for most hatcheries this separation consists of a wall inside the same building, at NPC there are close to 20 separate buildings spread out on the island to maintain this isolation. Fry are moved to the next growing stage by tankers which are disinfected after each use. If a problem develops, it is easy to isolate and contain.

NPC's isolation methods continue outside of the hatchery and throughout the farm as well. Each farm is kept as separate as possible from the other farms. When ponds are filled with water, workers are not allowed to go between farms. Fry, feed, and harvesting vehicles have to undergo a bath before being allowed to travel to the next farm.

"We have a policy that it is better to be safe than sorry. If one batch of fry seems to have deformities, we kill them all and send samples off to secure laboratories to be analyzed. The grow-out farms have the same policy. In the 10 years that I have been here, we have never had any positive readings for any illness or diseases."

It would be easy to tell Kumar to stop patting himself on the back. Some would say that with no shrimp farms within a two-hour bird-fly vicinity, the actual

10 things you didn't know about NPC

1. If NPC's ponds were combined into one huge pond, Monaco could fit into it 34 times. However, when looking at total land size, all of Bangkok and its 13 million inhabitants could fit into NPC's 250 sq km farm.

2. No antibiotics are used in any phase of NPC's shrimp operation.

3. NPC land-based recirculation system for Greater Amberjack (*Seriola Dumerili*) will be the largest of its kind in the world, producing 5,000 metric tons of sushi-grade fish annually.

4. A sister RAS project is growing sea cucumbers (*Holothuria Scabra*). Although much less attractive than amberjack, it is just as valuable of project.

5. As part of NPC's marine agriculture project, Red Sea native algae *Dunaliella salina* is one of three species being grown. The red algae, however, is NOT the reason for the Red Sea getting that name – although it makes a great story.

6. NPC's chitin, chitosan and glucosamine production from shrimp heads is the only one in the world which can guarantee complete single-source, antibiotic-free raw material.

7. For a visit once by King Abdullah bin Abdulaziz Al Saud, a special meeting hall with quarters was built at the farm, appropriately called "The Palace".

8. In accordance with the Kingdom of Saudi Arabia's strict Wahhabi ideology, one of NPC's two shrimp processing plants is women-only.

9. Instead of disbanding NPC's highly specialised desert marsh construction crew when Phase II is finished, the company is looking into sending its work force into similar areas in Sudan and Mauritania to build new shrimp farms.

10. Because the company is moving quickly into other aquaculture projects, the name National Prawn Company will be faded out and Robian used in its place.



'NIGHT OWLS': Harvesting shrimp. Despite tough conditions, this is one of the most popular jobs on the farm.

chances of any disease getting in is nil and these ultra-strict biosecurity measures are a waste of time and money.

Kumar does not agree in the slightest. "What do you think is out there in the water; is seawater bacteria free? Do you think that wild shrimp and crabs don't have diseases as well? No, because measures are in place, that is why we are disease free."

All in the system

Although many free-thinkers bristle at the thought, some of the world's most successful companies are food franchises such as McDonald's and Subway where conformity and structure are the secrets to their success. At McDonald's, each fry cook doesn't experiment with different cooking times for French fries; all McDonald's outlets cook their potatoes exactly the same time. This means that not only is there just one set of instructions for employees, but customers too can expect the exact same quality.

While Australian Dallas Donovan, the director of aquaculture and operations, would probably never compare NPC to McDonald's, there are strong similarities.

"We are quality-assurance driven with everything we do, which is why we use a systems approach to everything we do. If you have pond managers experimenting, trying different feed combinations or other things, you don't have a consistent product, which is what we're after," he says.

"Sure, we have research teams



THE FORT KNOX OF SHRIMP: NPC's broodstock farm.

and trial ponds to try out new ideas, but once we decide on an approach, it becomes part of our SOP [standard operating plan] and all ponds are run exactly the same. This is important when you realize we have workers from around the world. Although English is the official language on the farm and all workers are expected to either know English before coming here or learn it through our training, language – and confusion – can still be a problem.

"Part of our success here is making sure our system approach is followed; we have teams checking on this

'Anyone can grow shrimp or fish, but can you do it at a profit?'

Dallas Donovan, Director of Aquaculture and Operations

constantly, from biosecurity in the hatchery and on the farm, to quality control in the processing plant. From broodstock to frozen block, it all follows a set system.

"For shrimp our greatest challenge is managing growth while maintaining sustainability. Sustainability is one of those words thrown around today; for us it means knowing that what we do today will take us into the future. It's about the environment, but it's also about the community and the finances. It's all three, and you need to keep all in balance if you want to be in business tomorrow. Anyone can grow shrimp or fish, but can you

do it at a profit? You need the right combination."

Night owls

It's close to midnight and the night is hot and humid. As with most nights, harvesting is going on across the farms. Philippine native Nereus Jethro Abad, harvest support manager, is checking in on one of his crews, making sure everything is going alright.

There are a few minor problems tonight, the biggest one being the full moon which is making the shrimp scatter throughout the pond instead of being easily attracted to the bright lights beaming from the harvesting vehicles. Still, Abad sees no reason why tonight's goal of 50 metric tons of shrimp from six ponds can't be easily met and he's happy with the progress his teams of "night owls" are making.

"It's a really tough, physical job. It takes between 12 to 15 hours to drain and harvest a 10ha pond, working two shifts of five men each. We work at night for most of the year because of the heat of the day, but also because it's easier to get the shrimp to swim to one end of the pond using lights to attract them. In the winter time, this means working in pretty cold conditions; it's no fun."

As the ponds are drained, the gathered shrimp are brought onto trucks using either a screw-type or conveyor belt system. They're then packed 200kg to a plastic tub, which has ice in it to kill and chill the shrimp, bringing them from 28 deg C to 4 deg C. There is a set goal of four hours from pond to finished processing line, but it usually takes less than two.

"The whole time we're harvesting we're checking the pond's DO [dissolved oxygen] to make sure it doesn't go too low and the shrimp start dying in the pond. Sometimes, we have to stop operations for a little while and add water to the ponds," says Abad.

"We're always checking the temperature in the tubs, making sure trucks don't go from farm to farm without being thoroughly disinfected. We're always checking something, making sure quality doesn't drop."

Next year with the increase in production, Abad says NPC will need to harvest 110-140 metric tons a night.

This will probably mean harvesting during the day. He won't answer the question of how much of a challenge this will bring.

Because of the tough conditions, you have to wonder if it's difficult to attract workers willing to work the harvest shifts.

Abad laughs. "You'd think so, but it's the opposite, people want to work on these crews. Maybe it comes from the camaraderie you get from doing a difficult job together. Other workers see this attitude my guys have and they want to be part of it."

He laughs again. "I can't believe it's because they want to work for me."

When pressed about his management style, he says that he thinks the most important

FACT FILE

Location: Al Lith, Saudi Arabia

Farm Size: 250 sq km, with an annual production of 16,000 metric tons of shrimp (42,000 when Phase II is complete) and 5,000 metric tons of amberjack at first harvest)

Key markets: Spain for frozen shrimp; Japan for sushi-grade shrimp



thing for a manager is to make his workers feel secure in making decisions.

"I can't be everywhere and although I'm just a mobile phone call away, I want my guys to solve their own problems if they can. As long as they've made a decision – even if it turns out to be wrong – I'll always support them."

Is that how management treats him?

He raises a finger to make a point. "Of course I miss my family back in the Philippines and they miss me," he says, "but they know how much I love my job. They would rather have me here and happy, than at home and miserable. This is a great company to work for."

Best practices brought together

On the last day of my visit, I talk to Dieter Moeller, director of corporate strategy and business development, and ask him which business model NPC is following

in regards to their staff? The Four Seasons Hotel and Resorts springs to mind with its system of empowering workers and making sure talented staff always have a way to advance in the company. But Moeller says no.

"There was no benchmark or role model used here. Instead, our management style was formed and grown internally," he says. "What has happened – and what is still happening – is that people have brought to NPC the best business practices from where they were working before."

For workers coming from places such as India, Bangladesh, Nepal, Indonesia and the Philippines, it means having the opportunity to advance in a job much further and faster than if they had stayed home.

When asking workers, especially those with technical skills such as chemists and biologists, they all say that their work is more challenging and rewarding at NPC than the work of fellow classmates who were not willing



REDUCING MANPOWER AND WASTE: NPC is experimenting with feed silos instead of traditional feed bags to see if they are ecologically sound and economically viable.

to take the perceived risk of moving to Saudi Arabia.

What brought Malaysian Mazian Bin Ali, manager of the engineering and construction department, to NPC was the opportunity to work close to Mecca. What keeps him here is the fierce loyalty of "his guys".

"There are 400 people working on this site, finishing up Phase II, working two shifts night and day. It's very hard work. The ground has hidden ancient coral clusters which can damage diggers, the dust and heat are constant, and then there is the high salinity which makes even stainless steel

rust. "We are operating under very tight deadlines and could definitely use newer equipment and more staff, but bringing in workers is hard with Saudi visa requirements," he says.

Still, he adds, there is something very special in working here. "I was heading projects in Dubai before coming here, but here, I don't know, maybe because families aren't here, my guys really pull together like nowhere else I've seen," says Mazian. "This site is theirs. They're willing to work late, to work on off-days to see the job finished. This site, yes, it's theirs."



FIERCE LOYALTY: Mazian Bin Ali, manager of engineering and construction sees a spirit at NPC he's never seen before.