



**NEWSLETTER  
OF**

**AQUACULTURE ASSOCIATION OF SOUTHERN AFRICA**

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**A Word from the AASA Chairman and the CEO of AISA**

**Etienne Hinrichsen**

The representatives of the various species groups in the AASA Executive tried their first web based meeting via Skype early in March. Although this resulted in mixed success with regards to clarity and efficiency, I believe web based meetings is something that will become more and more

common as the South African band widths and speed improve. A physical meeting follows (end of March) and we also hope to try out telephone based conference calling in the new future.

Since I am trying to sound like an IT guru, let me keep going by informing you that we are rebuilding the AASA website from scratch to create a more user friendly, informative and interactive website that can serve the aquaculture industry more effectively.

It may sound like a long way off, but the AASA office is already starting with the planning for the 2011 aquaculture conference. Criteria for venues and a host country are being drawn up and we will be entering into discussions with potential hosts shortly. As soon as the venue and dates have been finalized, we will make this know widely so that our 2011 conference can be even bigger and better – building on the benchmarks set in 2007 and 2009.

With regards to aquaculture in southern Africa, there are numerous Government and private initiatives ongoing in all of the SADC countries and I hope to bring you a more comprehensive update of these in the future. The AASA Executive has been organized into portfolios so that the execution of tasks (be it conferencing, Government liaison etc.) can be dealt with by dedicated groups of people and so that the AASA office can spend more time in coordinating these inputs and efforts.

The OIE are once again back in our region and will be hosting an OIE Regional Training Seminar for the OIE focal points on aquatic animal diseases in June (Namibia). These initiatives continuously ensure that health management experts in southern Africa remain abreast with the latest aquaculture related health management issues and it creates an important and effective platform for inter-country cooperation.

With a quarter of 2010 now behind us I hope that the steadily improving global economy and the continued enthusiasm of all aquaculturists in our region, will pave a great decade of aquaculture development ahead.

## The Editor's choice

Adrian Piers [newsletter@aasa-aqua.co.za](mailto:newsletter@aasa-aqua.co.za)

### Editorial

The industry has long grappled with negative PR regarding its environmental impacts. The truth is that most of the fish farmers in the world, and especially in Africa, are relatively resource poor, and consequently try as best they possibly can to utilise the wastes from farming operations to fertilise crops or ponds.

Phosphates and nitrates are commonly regarded as pollutants in developed countries as they have long been subsidised for terrestrial farmers as fertilisers, and who have thus poured massive amounts on their crops. Until recently, this ran off and caused eutrophication of the rivers and the demise of aquatic life, bringing it to the forefront of attention. With the advent of farming fish, aquaculture in the developed world has been vociferously criticized and singled out as environmentally unfriendly due to the preponderance of cage farming operations producing Salmon that do add these nutrients to the environment, and some ignorant individuals have extrapolated this to ALL aquaculture, whereas this is simply not the case. Below is an article on this with the interesting finding that bigger farms are more likely to be LESS polluting than smaller ones. Some Food for thought!

For the rest of us pond farmers, we still have to find the money to buy (unsubsidised!) fertilizers to add to our pond water or integrate them with other livestock operations to make them profitable

and sustainable. Surely one of the “greenest” food production systems in existence. When are the critics going to report on that?

### **Bigger is better on Scottish fish farms**

The Aquaculture industry has been urged to look at location and management techniques to reduce the environmental impact of rapidly expanding sector.

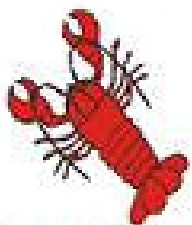
Bigger fish farms do not necessarily have a greater impact on their surrounding marine ecosystems, according to an analysis of Scottish fish farms. Researchers from Oceanlab at the University of Aberdeen studied data from 50 salmon and cod farms collected by the Scottish Environment Protection Agency (SEPA). Contrary to popular belief, they found that location rather than the size of the fish farm was a more significant factor in predicting its environmental impact.

The aquaculture industry has trebled in size since 1995, with half of all fish eaten now farm-reared. Scotland has seen rapid growth since the 1980s and now has around 450 licensed farms, almost all producing salmon. However, the rapid spread of fish farming around the world has led to concern about its negative impact on marine ecosystems as well as problems including disease, mixing of wild and farmed stocks and chemical use. Fish farms generate organic wastes in the form of uneaten food and fish faeces. These sink to the seabed and can have detrimental effects on the organisms that live there if they are allowed to accumulate.

Using data that fish farms are legally required to provide to SEPA, Oceanlab researchers were able to assess how the environmental impact of fish farming might be reduced. There is a lobby group that just doesn't want big farms, but going by the data we've seen larger farms do not necessarily mean larger impacts,' said Dr Martin Solan. 'Bigger farms tend not to be located in more sensitive areas; there tend to be stronger dispersal tides and they usually have better management techniques such as technology controlling feeding rates and reducing waste,' he added. Dr Solan said their findings could help the global farmed fish industry expand while reducing some of its impacts on the marine ecosystem. 'It is clear that fish farming provides one solution to the increasing global demand for food, but the real challenge is how to feed the world with fish without destroying our coastal environment.

'Our findings provide reassurance that Scotland's fish farming industry has found a way to achieve expansion in a responsible manner. I have no doubt that other countries around the world will follow Scotland's lead,' he said.

[http://www.theecologist.co.uk/News/news\\_round\\_up/448258/big\\_fish\\_farms\\_not\\_necessarily\\_most\\_polluting.html](http://www.theecologist.co.uk/News/news_round_up/448258/big_fish_farms_not_necessarily_most_polluting.html)

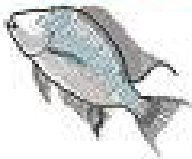


## **African Fish**

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## Abalone



### Seatek director to appear in court

By Taralyn Bro

Another nail was hammered into the coffin of East London's beleaguered abalone farm when a director of the company was arrested for allegedly taking the quarantined molluscs off the premises. Police spokesperson Captain Stephen Marais confirmed that one of the directors of Seatek had been charged under the Marine Living Resources Act. In the course of the arrest, police recovered a black bag with 16kg of shelled abalone, and 2kg of unshelled abalone. Marais said the street value of abalone is roughly calculated at between R400 and R600 a kilogram.

Marais yesterday said the events unfolded after police and Marine and Coastal Management (MCM) officials were tipped off about a possible theft of abalone at the Seatek farm in the Industrial Development Zone. When police arrived at the scene, Marais said a VW Polo sped off, heading in the direction of Orange Grove. Police gave chase but along the way, according to Marais, the car stopped ahead of them. A woman got out the car and dropped a black bag before fleeing on foot. Officers continued to chase the Polo, eventually catching up with it in Orange Grove. It was there that the director was arrested.

The Dispatch spoke to the suspect, who insisted that he had been merely taking the abalone "samples" for testing. He disputed the police's version of events, claiming that his only crime was to carry abalone in his own vehicle, which he does not have a permit to do.

Seatek had been placed under quarantine by MCM over the past few weeks after officials found evidence of disease and starvation of the molluscs at the farm. The terms of the quarantine mean

that the molluscs cannot be removed at all. The latest drama happened just days before the SPCA and MCM move in to destroy the diseased stock. Yesterday SPCA inspector Allen Westerberg confirmed that D-Day for their termination would most likely be Tuesday. Seatek has been mired in controversy since empowerment company Royal Square Investments used money from the Department of Agriculture to buy into Wavelengths Pty Ltd, which trades as Seatek.

Manager Eden Kriel claimed that it was the empowerment firm's neglect of the farm that resulted in the current mess. Royal Square's Sibusisiwe Zokwe could not be reached for comment yesterday. Another director, Roger Kriel, attributed the demise of the farm on the unsuccessful attempts by Royal Square to secure further funds from the Department of Agriculture, saying that the empowerment group had no operating capital to speak of. This would go some way to explaining why Eden Kriel has run out of feed to sustain the abalone four times over the past year, a major factor in the molluscs' failing health. Westerberg told the Dispatch that he found starving abalone had resorted to cannibalism. Agriculture MEC Mbulelo Sogoni yesterday said he was aware of the department having been approached for further funding.

"How can the department be blamed for the failure of a private company?" Sogoni asked. "Even if the department initially had the money for the project, it doesn't mean the project would be supported forever."

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## Eels



### Madagascar eel production

By Natalia Real

The Ripple Fish Company wants to breed African eels on a large scale in Madagascar under the supervision of scientists from the Institute for Marine Resources and Ecosystem Studies (IMARES). Ripple Fish has already conducted studies with glass eels on a small scale and is currently setting up a commercial breeding facility. Olivier Schneider from IMARES negotiated a EUR 1.7 million-contract that was signed in February. IMARES will aid the company with its knowhow on sustainable breeding methods and ways to exploit the African eel. "We facilitate; the company is responsible," Schneider said.

Dutch scientists want to do their part to help prevent an eel crisis due to depleted stocks. The species has been decimated in European waters, and part of the reason is that glass eels have been overfished for breeding purposes, The Fish Site reports. "We are not going to sit and watch it go wrong and then explain why it went wrong," said Willem Dekker, an eel expert closely involved in the Ripple Fish project. "We can learn a lot from our experiences in Europe."

Schneider expressed concern about overfishing this last healthy eel stock.

"The African eel has not yet been overfished and it must stay that way. We don't want a repeat of the European situation," he noted. The venture will also focus on fish food and sustainable waste disposal. "We still know very little about the African eel. We shall first have to focus on basic breeding practices such as optimising temperature, feed, water flow, density and of course animal welfare," Schneider elaborated. Because all the activities are performed locally - the building of aquaculture farms, fishing for glass eels and processing the end product, among others - local communities benefit from the project.

Dekker believes there is remarkable potential for success in this venture, especially since African eels weighing under 1g grow into 1-2 kg within just six months. Meanwhile, the European eel takes



at least two years to grow that much in a heated fish tank. But he also realises that there is a risk that this last intact eel population could be depleted. "Ripple Fish has a sound businesslike approach but it also has good intentions and some idealism," said Dekker. "Besides, nature conservationists and development organisations are watching this project with eagle eyes."

<http://www.fis.com/fis/worldnews/worldnews.asp?monthyear=&day=2&id=35712&l=e&special=&nb=1%20target=>

## Eel stocks in Europe

By Herman Wouters in the New York Times

The number of young eels entering Dutch rivers has dropped to 1 percent of former levels, according to the World Wildlife Fund. "Only the children of fishermen know what it's like to have it, when still warm, and the skin puts a tingling feeling on your lips," said Mr. Visser, 63. His very name, in Dutch, means fisherman, which, like many other men in the family, is what his father was. "Mother steamed the eels with butter, or baked them," he said, a smile of satisfaction brightening his face. "Father also smoked them, always around Christmas."

Mr. Visser went into telecommunications, but two years ago, a group of eel fishermen who knew his father begged for his help. The North Atlantic eel, as much a cult as food in the Netherlands, is disappearing, mainly the result of overfishing as fresh markets for elvers, or baby eels, open in Japan and China. Environmental groups are pressing the government to restrict eel fishing, and the country's inland eel fishermen, a disappearing breed like their catch, turned to Mr. Visser to defend them. The government decided that, beginning this year, fishing for eels will be banned from September to November. "It's a good start, though we think it will be several years before the species is recovered," said Clarisse Buma, spokeswoman for the World Wildlife Fund in the Netherlands. "In all stages of life," she said, "the European eel is threatened."

But time is running out for the eel fishermen, too. So Mr. Visser, now chairman of the Federation of Dutch Inland Fishermen, is negotiating an alternative with the government. When Mr. Visser's father fished a generation ago, about 200 fishermen plied the canals and rivers of his native Friesland, in the Dutch north; now there are 17. "It is not a happy situation," he said.

Aart van der Waal is certainly unhappy. He lives with his wife and four children in a brick cottage outside this village along Hollands Diep, an estuary that flows to the sea. Mr. van der Waal, 40, the son of an insurance broker, has fished for eels since his teens, interrupting his fishing for about a year to study law, after which he returned to eels. Neither of his two sons show interest in his job. "They see their father's cold hands and the troubles with the government," he said, shaking his head. He fishes the delta of the Rhine and Meuse Rivers, where a century ago 100 eel fishermen dragged their nets; today there are 4. The eels commonly fished here spend most of their lives in fresh water, like the Dutch rivers and estuaries; adult eels migrate annually to the Sargasso Sea in the Atlantic Ocean to breed, after which young eels, known as glass eels, return to Europe. But the number of glass eels entering the rivers has dropped to about 1 percent of former levels, according to the World Wildlife Fund. While the government has appropriated \$960,000 for fishing businesses to compensate for the loss, Mr. van der Waal is dismissive. "We get money from the government, but it's half of what we earn," he said. "What's more, many fishermen think it's an insult, and refuse the money, though I have four children, I need the money."

Given the eel's endangered state, some Dutch fisheries have begun farming eels, while supermarket chains have stopped stocking it. Food companies have begun replacing it. In Spain, where glass eels are fished for export to Asia, faux eel meat is made of Alaskan pollock; in the Netherlands, one big food wholesaler, Anova Seafood, has developed a new fish, a cross of two types of African catfish that it calls the Claresse, an invented name it has trademarked, that it sells as a substitute for eel, both smoked and fresh. The Claresse, said Hendrik Colpaert, Anova's marketing director, "is positioned as eel, though not in presentation or flavor; the reaction from retailers has been very favorable." He called the idea of making eel out of pollock "very strange."

Joost Kant, 69, an eel trader who lives five minutes from Mr. van der Waal, said he could distinguish wild eels from the farmed or ersatz variety “Blindfolded!” Wild eels, he said, “eat snails, bugs, all sorts of creatures; farmed fish eat other fish.” Mr. Kant, who only leaves the warmth of a Franklin stove these days to consult the stock market on a laptop, has sold eels for 30 years, more than half smoked over oak or birch fires, and much of it to his son, who has a fish market. But the eel no longer plays the role in the Dutch diet it once did. Asked whether he ate much eel, Mr. Kant said, “No, not much, and then only when fresh out of the smoking oven.”

Meanwhile Mr. Visser hopes to forge a three-way alliance among eel fishermen, eel farmers and traders to negotiate an alternate plan with the government that would restore the wild eel population without a lengthy ban on fishing. “The politicians are very sensitive to what is happening on the eel market,” he said. Eels and politics are an old mix, he said. In the 19th century, so-called eel riots erupted in Amsterdam when the police tried to break up a popular game involving a kind of tug of war using an eel, and fishermen battled the police. Last year, eel fishermen marched through the seat of government, The Hague, when the three-month ban was approved. “Now you see a bit of tension between the practical fishermen and the theoreticians,” Mr. Visser said. “We say maybe we can do better, to work on a more sophisticated plan in which the key word is durable, because the eel has many secrets.” Some are not waiting to discover those secrets. Willem Rozendaal sold eels in the Netherlands until deciding 20 years ago to migrate to England, where he founded the Dutch Eel Company, buying and selling eels in central England. “It’s easier to start a business in England,” he said in a telephone interview. He added, “I have no market for eels in England, so I export to Holland, and they’re smoked in Holland.” Something had to be done to fix the declining eel population, he agreed, yet oddly, despite the scarcity, the price of eel was not increasing. “The funny thing is, they’re selling now for less than four to five years ago,” he said.

<http://www.nytimes.com/2010/02/16/world/europe/16eels.html>

## Trout and Salmon



### Enhanced muscle growth in Trout

By Chris Jablonski

A decade-long effort by a University of Rhode Island scientist to develop transgenic rainbow trout with enhanced muscle growth has resulted in fish with what have been described as six-pack abs and muscular shoulders.



Assuming successful safety assessments and regulatory approval, the development of more muscular trout could boost commercial aquaculture because aquaculturists could grow larger fish without increasing the amount of food the fish are fed.

According to Terry Bradley, a URI professor of fisheries and aquaculture, his exploration into the inhibition of myostatin, a protein that slows muscle growth, has

obtained “stunning results” in the last two years, with trout growing 15 to 20 percent more muscle mass than standard fish. Unlike fish, the number of muscle fibers in mammals is limited after birth,

says Bradley. In fish, however, since muscle fibre numbers increase throughout their lifespan, there was no telling whether inhibiting myostatin would cause an increase in muscle growth.

“Belgian blue cattle have a natural mutation in myostatin causing a 20 to 25 percent increase in muscle mass, and mice over expressing myostatin exhibit a two-fold increase in skeletal muscle mass. But fish have a very different mechanism of muscle growth than mammals, so we weren’t certain it was going to work,” Bradley said. Turns out that with a bit of time it did work. Bradley and his team spent 500 hours injecting 20,000 rainbow trout eggs with various DNA types designed to inhibit myostatin. Of the eggs that hatched, 300 carried the gene that led to increased muscle growth. After two years, most exhibited “body-builder” physiques with “six-pack abs” even though fish lack standard abdominal muscles.

The increased musculature throughout their body included a prominent dorsal hump that made them look like they had muscular shoulders. The fish displayed no change in behavior compared to their natural counterparts. The first generation of transgenic trout were subsequently spawned, and offspring carrying the gene in all of their muscle cells have been produced. Now, studies are under way to determine if the fish grow at a faster rate as well.

The implication of the research are twofold, says Bradley. “The results have significant implications for commercial aquaculture and provide completely novel information on the mechanisms of fish growth.” It also allows for comparisons between the mechanisms of growth of muscle in mammals versus fish, and it could shed light on muscle wasting diseases in humans. Bradley will continue to study the fish to learn if the new gene affects any other genes, and to determine if new husbandry practices will aid in the raising of the trout.

<http://blogs.zdnet.com/emergingtech/?p=2160>

## Other



### Kob farming in the Eastern Cape

From the Daily Dispatch

Kob farming is proving to be the driving force behind developing an aquaculture culture in the Eastern Cape. From Andre de Wet’s zero waste Kob farm in Mooiplaas to Espadon Marine and Pure Ocean’s Kob ventures at the East London Industrial Development Zone (IDZ), this new industry is gaining ground here. A moderate climate, close proximity to the sea and, in the case of Espadon and Pure Ocean, the help of the IDZ have spurred on the trio separately to take on the Kob market.

De Wet’s Mooiplaas farm sold its first Kob harvest last year to I&J. Since then, De Wet has put the brakes on his business for a while to look at sites closer to the coast for another grow-out facility. Once this new project is off the ground, he will continue to breed Kob at Mooiplaas, moving the fish to the coast when they are more mature. This move has to do with circulating fresh sea water into the tanks, all aimed at better tasting fish at the end of the day.

Over at the IDZ, construction workers, graders and builders are hard at work on two sites. At Pure Ocean, a two-year pilot project will hopefully get off the ground in October. Currently, the site is under construction and will ultimately be used to produce 200 tons of Dusky Kob if all goes according to plan. Pure Ocean development manager Andre Bok said the pilot project would test economic viability and test how receptive the market would be to the farmed Kob. R45million will be invested in the project, but Bok said the investors were well aware of the risks such farming attracts. Also aware of risks, especially bio-security threats by being such close neighbours with Seatek abalone farm and Pure Ocean, are the owners of Espadon Marine. Guy Musson, Maryke



Musson and Liam Ryan moved their Kob farming production from Hermanus and Gauteng to the EL IDZ after scouring the country for viable sites. Maryke told the Dispatch they settled on East London because of the excellent climate and supportive environment of the EL IDZ. At the moment Espadon Marine's Kob are housed in a temporary facility adjoining Seatek while construction of their permanent facility goes on next door. They will move in in the next couple of weeks, and will also have their first batch of East London grown Kob ready for consumers before the 2010 World Cup. Espadon successfully sold farmed Kob in the Gauteng premium market from 2006 to 2009 from its pilot production plant in Centurion, before moving to East London. Espadon Marine has already invested R30m of internal funds in its completed pilot phase and has also already invested a further R23m in phase one of its commercial Kob hatchery and growout facility in the IDZ, which brings its investment to over R53m to date, with further investment and expansions being planned simultaneously.

IDZ spokesperson Ayanda Ramncwana said most of the land designated for aquaculture within the zone – 30 hectares – had already been taken, but that if more aquaculture investors were to show an interest, they would be welcomed.

## Regional Roundup

### Western Cape GIS map completed

From Lizeth Botes Aquaculture Institute of South Africa

The Aquaculture Institute of South Africa (AISA) has completed the Western Cape Aquaculture GIS map in collaboration with the Dept of the Premier, Dept of Economic Development and the Dept of Agriculture.

The map is the first of its kind for the aquaculture sector and contains all information relevant to Aquaculture. Not only is it a very useful tool for further development of aquaculture by industry and government, it is also a tool that can regularly be updated as the sector changes. It is our hope that this map will prove to be very useful and that support for a national initiative will be obtained.

Please view the map by going to AISA's website (projects & programmes page) and click on the link. Your comments and suggestions would be much appreciated.

Contact Lizeth Botes at [lbotes@ai-sa.org.za](mailto:lbotes@ai-sa.org.za)

### Namibian Agribank signs deal to boost Aquaculture

By John Ekongo

The Ministry of Fisheries and Marine Resources (MFMR) and the Agricultural Bank of Namibia (Agribank) have signed a guidelines document for financing aquaculture projects in the country. The guidelines document is a precursor for a financing agreement that will exist between the two institutions. Under the agreement, Agribank will provide financing for aquaculture projects that have proved to be self-sustainable, can provide jobs and at the same time contribute towards food security, but those seeking finance from the bank will first have to meet the stringent criteria as stipulated in the guidelines document.

Fisheries Minister Dr Abraham Iyambo commended Agribank for the assistance. He said since the concept of aquaculture was conceived in 1999, the ministry faced obstacles in sourcing funds to stimulate the growth of the sector, despite its enormous potential to become a contributor to the national economy. Past attempts to engage the private sector and private financial institutions to finance aquaculture related projects in the country proved futile, much to the disappointment of Iyambo. So frustrated was he that at one point Iyambo lobbied Cabinet to establish an Aquaculture

Bank, for which permission was granted, but his ministry had to shelve the idea after assurance from Treasury that government-owned banks would help in this regard.

“We rescinded that decision after being convinced that the Development Bank of Namibia and Agribank would have a component which would fund the aqua and marine culture industry.” The agreement is testimony of that assurance, said the Minister.

Chief Executive Officer of Agribank Ambassador Leonard lipumbu assured lyambo that Agribank is up to the challenge, despite minimal resources at its disposal. lipumbu too admitted that financing of aquaculture is a serious challenge as the sector requires a huge financial boost which often is beyond the financial capabilities of the bank. According to lipumbu, Agribank received applications from the public seeking financing in aquaculture to the tune of N\$350 million, which could not be processed due to the fact that the guidelines were not in place. Now that the guidelines are in place, the bank will finance aquaculture projects to the tune of N\$8 million during this financial year.

Agribank has already granted finance to two aquaculture projects, namely, Nam-Aqua Oyster Farming, a Walvis Bay-based company, to the tune of N\$2,2 million, as well as Rainbow Fresh Water Farm from Omusati Region. However, officials could not provide the figure for Rainbow Fresh Water Farm. “It’s a good amount of money,” quipped Atushe Hitula, Director of Aquaculture in the Ministry of Fisheries.

## **“Support Zambia Aqua Farmers” Project launched**

By Fridah Zinyama of the Post

Department of Fisheries director, Charles Maguswi, has said there is need to overcome the slow growth of the aquaculture (fish farming) sector in the country, as it has great potential for reducing poverty in the country. Aqua-Farmers Advisory Group chairperson David Kaunda said the fish farming sector had been having difficulties accessing credit since it was a relatively new sector in the country.

During the launch of the project ‘Support to Zambia’s Aqua Farmers’, Maguswi said currently, Zambia was only producing about 7,000 metric tonnes of fish, which was way below its production potential. “The country produces about 80,000 metric tonnes of fish from its natural water resources and this amount could be easily surpassed by the aquaculture sector,” he said. “This will only happen once the challenges the sector is facing are adequately addressed.” Maguswi said there was also need to ensure that fish farmers produced enough fish so as to realise some profits from the sector. And Kaunda added that the fish farming sector has had some problems in accessing funds since lending institutions normally prefer to lend to the agriculture sectors which they are more knowledgeable of. “We are hopeful that the situation will now change since more and more information is being availed about the aquaculture sector,” he said. Kaunda said support to the fish farming sector should be well coordinated if the sector is to grow. “In the past, support to the fish farming sector has been fragmented and this has contributed to its poor development,” he said. “It is also important for both government and the private sector to work together to ensure the growth of this sector.”

Fish farming is considered a good means of reducing poverty in rural areas as it can be easily done if farmers follow all requirements. It can also be done on a community basis, therefore empowering an entire community. Kaunda said it was also important for the government to quickly deal with land use conflicts which had been arising as farmers in rural areas grow their fish. “Government should also ensure that they deal with the licensing issue which has been affecting the growth of the sector. There is so much red tape in registering a fish farming company and this process has been depleting people’s resources,” Kaunda.

[http://www.postzambia.com/post-read\\_article.php?articleId=5954](http://www.postzambia.com/post-read_article.php?articleId=5954)

## **Lack of funding hindering Aquaculture initiative in Kenya**

By Ouma Wanzala

Lack of funding for fish farming is threatening to thwart plans of increasing production and easing pressure from major water bodies like Lake Victoria and Indian Ocean.

The Ministry of Fisheries intends to construct 200 ponds and hand them over to farmers in 140 constituencies under the economic stimulus programme. "Fish farming has been identified as one area that will reduce not only fishing pressure on our oceans, lakes and rivers, but will also enhance food security, unemployment and wealth creation and healthy living for our people," said Fisheries minister, Paul Otuoma. During the 2009/2010 financial year, the government allocated Sh1.12 billion to support fish farming activities. About Sh600 million had been earmarked for the second phase which was supposed to have started by end of January, but Treasury has not disbursed the money.

About 100 ponds are planned to be built in the second phase of the project. In the first phase, farmers dug ponds awaiting for stocking of fingerlings. "We are going on well with first phase in which we have done most of the work and we are now embarking on stocking those fish ponds that are complete," said Dr Otuoma. He said once funds are paid which is likely to be from the supplementary budget in April, they will start the second phase immediately. "We had some problems, in which some fish ponds were not ready on time, as well as delay in maturity of fingerlings. We want fish farmers to get mature seedlings."

The ministry has also put in place a National oceans and fisheries policy to give the sector legal framework. The policy puts emphasis on the development of fish farming as one of its core activities. The fisheries ministry had carried out aquaculture suitability survey noting that preliminary results indicate that there is potential for farming in the whole country. Dr Otuoma said the potential area suitable for fish farming is over 1.14 million hectares, adding that if the potential is fully exploited, production could be increased to 11 million metric tonnes per annum and fetch Sh750 billion. Fish farming could create an industry employing and supporting a substantial number of farmers, feed manufacturers, fish processors, traders and other actors. The current production is only 4,220 metric tonnes with a total area under aquaculture production standing at 722 hectares.

Kenya has a vast network of water bodies that favour farming of a wide variety of fish species of commercial and food value, but has shown minimal growth since the early 1920s when it was started. Dr Otuoma said at the coast region Sh4 billion has been set aside for fish farming in the constituencies that border Kenya's coastline of the Indian Ocean. "These initiatives are geared towards bringing aquaculture sector production at par with 50:50 capture and culture," he said.

## **Feeds**

### **Omega 3 to be produced in canola**

By Sean Murphy for Landline

Australian researchers believe they may have solved one of the most pressing food supply problems of the 21st century by breeding canola containing the same omega 3 oils found in fish. As genetic modification goes it is a simple marriage of oil-rich marine algae and the easily grown canola seed crop, but its implications for global aquaculture are immense.

Most farmed fish species such as salmon, barramundi and kingfish need to eat fish to contain the sort of long-chain fatty acids which make them essential for a healthy human diet. Aquaculture is the fastest-growing protein production sector in the food industry and already accounts for half of the fish consumed globally. By 2050 an additional 70 million tonnes will be required at the same time as wild caught stocks are predicted to be in severe decline.

The so-called Omega 3 Project is part of the CSIRO's Food Futures Flagship, which aims to add up to \$3 billion to Australia's agrifood sector through frontier technology such as plant science. Team member James Petrie says the next phase of its work will be to replicate its success with canola in a large-scale on-farm trial. "We've got proof of concept, so what that means is we have proven a canola plant or a flax plant - an oil plant - is actually capable of making these long-chain omega 3 oils in the seed and building them up to relatively good levels," he said. "What we've got to do now is take it out of the lab and onto the farm." Mr Petrie says successfully growing genetically modified (GM) canola with the long-chain fatty acids, which boost brain development and cardiovascular health in humans, will have huge commercial implications. "There is large potential for adding enriched food ingredients to bread, milk, orange juice, food in the processing sector," he said. "But we're actually hoping the plant oils that we produce sustainably from these oil seeds are going to have enough of the EPA and DHA [nutritional components] to satisfy the growth requirements of aquaculture specifics."

The CSIRO's head of aquaculture research, Dr Brett Glencross, says if successful, the Omega 3 team will have achieved the "holy grail" of aquaculture. He says the industry currently relies on limited supplies of fish meal and fish oil and there has been an international scientific quest to find alternatives. "Australian aquaculture already supports a population of about 60 to 100 million people even though we're a country of only 20 to 25 million," he said. "So what I see Australia doing in the future is providing resources, this time fish feed resources, to sustain that future growth of fish worldwide and particularly in the Asian region."

The Omega 3 project may still take 10 to 15 years to reach commercial production but in the meantime, Australian researchers are at the forefront of new aquaculture feed development, blending fish oil with plant and animal oils from farmed species such as poultry.

<http://www.abc.net.au/news/stories/2010/03/05/2837750.htm>

and <http://www.abc.net.au/landline/content/2010/s2838754.htm>

## **Organic Aquaculture workshop report**

Global organic aquaculture production has increased by 950 per cent growth in the last 20 to 25 years, according to Tarlochan Singh, chief of INFOFISH Technical Advisory Services at the recent Common Fund for Commodities (CFC) and Food and Agriculture Organisation (FAO) INFOFISH workshop series on organic aquaculture and marketing. Expected annual production is expected to reach 500,000 tonnes in 2015, representing 1 per cent of global aquaculture production. As of 2008, organic aquaculture covers some 35 million ha.

The three main species raised are salmon, shrimp and carp, which comprise 31, 17 and 14 per cent, respectively, of global organic aquaculture production. Germany and Switzerland have recently also amped up their demand for organic pangasius. Some of the standards followed by CFC/FAO INFOFISH are a decreased protein and fishmeal diet content; no inorganic fertilizers, synthetic pesticides or herbicides; a lower energy input; a preference for natural medicines; and processing according to organic principles. Although organic certification allows farmers to fetch a higher price for their products - about 25-30 per cent higher - and gain access to the international market, the standards and certification requirements are still difficult obstacles in marketing and production in developing countries. One of the reasons is that certifying bodies have standards that vary greatly by country, certifier and species, Singh explained. Problems also include a narrow range of species, disadvantages for small-scale farmers, limited value adding in some nations and other marketing limitations.

Prevalent and important issues are still the organic feed used, traceability of feed ingredients, stocking densities or standing biomass and organic processing. Senior Expert Niracha Wongchida at the Department of Fisheries (DoF) in Thailand stressed that organic integrity must be maintained throughout the animals' life cycle. "This is achieved by the use of appropriate techniques. As much as possible, limit the use of food additives and apply only mechanical, physical, and biological methods in processing," she said.



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## Research matters, Reviews & Training

### African network to support Aquaculture and Fisheries

By Charles Mkoka

A new African network is aiming to increase the number of aquaculture and fisheries scientists on the continent and boost its dwindling fish stocks. The Fisheries University Network (FishNet), led by the New Partnership for African Development (NEPAD), was launched at the Bunda College of Agriculture in Malawi this month (15 February). It will recruit and train scientists on fisheries at member universities, in line with both national and pan-African development agendas.

"It is widely known that Africa lacks critical mass of fisheries scientists to adequately undertake various important functions along the value chain of fisheries and aquaculture from production to marketing and trade," Emmanuel Kaunda, regional technical coordinator for fisheries in the



Aquaculture Department at the University of Malawi, told SciDev.Net. Kaunda quoted Food and Agriculture Organization figures that fish supplies have dropped from about 17 kilograms per capita in the 1970s to less than seven kilograms per capita in 2006 for most African countries.

FishNet will facilitate information and resource sharing; policy dialogue; networking with strategic partners and mobilisation of resources, to address challenges holding back aquaculture and fisheries research in Africa. As well as conducting research into inland fisheries and aquaculture development, FishNet will ensure that research findings find their way to fish farmers and fishermen on the continent. The network is expected to work with the Partnership for African Fisheries (PAF), a programme for developing fisheries reforms in Africa. It will also receive around US\$10.7 million from the UK Department for International Development (DFID), said Tim Bostock, a senior fisheries advisor at DFID.

The Malawi meeting also saw the launch of postgraduate degree programmes in aquaculture and fisheries by the Regional Universities Forum for Capacity Building in Agriculture, a consortium of 25 universities in Eastern and Southern Africa established in 2004 and hosted by the University of Malawi. Kaunda said this was a major step in training African scientists and practitioners to respond to Africa's needs in fisheries and aquaculture production.

Sloans Chimatiro, senior fisheries adviser to NEPAD, said that fisheries research conducted by academics and students must include studies of farms and fishing communities to ensure that the research meets people's needs. The initiatives follow NEPAD's action plan for fisheries and aquaculture development endorsed by African heads of state at the Fish for All Summit in 2005 in Abuja, Nigeria.

## **Investing in Aquaculture**

### **Lakes available for aquaculture in Uganda**

By Chris Ahimbisibwe

The Fisheries Ministry is drafting a policy to allow districts to lease lakes, state minister Fred Mukisa has disclosed. Mukisa said the districts will lease the lakes for a specified period of time to investors. He clarified that the crater lakes would be privatised first. He said the aim was to create a sense of ownership in the use and management of the lakes in order to increase fish production. Mukisa said because the public thinks the lakes belong to no one, the vital water bodies have been degraded and fish depleted. Mukisa said the people, who will manage the lakes after paying for the leases, will look after the lakes and the fish and promote tourism.

He noted that once the lakes are privatised, they will encourage investors to carry out cage fish farming to increase fish stocks.

"These are national waters and the only way to make use of them is to come up with policies on how we can use them sustainably," Mukisa said. He lamented that the Ministry finds it difficult to enforce fishing guidelines because it is poorly funded. He said Uganda needed new methods of fish farming like cage fish farming, which will be introduced on Lake Victoria.

### **Fund launched with focus on South African aquaculture**

By Jennifer Bollen

UK-based SilverStreet Capital has launched a rare agriculture fund focused on South Africa in a bid to capitalise on a rising demand for food and the cheap cost of land in the country. A private equity firm co-founded by a former fund manager at ABN Amro Asset Management, aims to raise

\$100m (€73m) to buy farms in South Africa. SilverStreet said the fund, which has an upper limit of \$300m, will officially launch next month and finish fundraising next April. Using entirely equity as opposed to a substantial amount of debt common in private equity investments, it will buy farms growing produce including corn, wheat, soya beans, fruit and tea. It will also target aquaculture.

The fund will target institutional investors in Europe, particularly the UK, Scandinavia and Holland, according to Gary Vaughan-Smith, chief investment officer and a founding partner of SilverStreet. He said the fundraising responded to increasing demand for food because of a growing global population. He said: "Agriculture companies will do very well in the next five to 10 years. Irrespective of what happens in the financial sector, growing food will be a good thing. Prices will rise." Vaughan-Smith added the average cost of agriculture land in South Africa stood at about \$2,000 a hectare in 2008, according to the most recent data available from Eurostat. The figures compare with about \$22,000 in Germany, one of the most expensive countries for farmland. In the US, the average cost of farmland stood at about \$5,000 per hectare.

SilverStreet's fund, a signatory to a set of United Nations-backed responsible investment guidelines, will also look to support small-scale subsistence farms near its investments by training farmers to make their land more efficient and helping to find seed donations.

The fund is a rare example of South African private equity investment in agriculture, a sector that has attracted few dedicated buyout funds. Just 12 private equity agriculture funds globally finished fundraising last year, according to data provider Preqin. These funds raised an aggregate \$1.45bn, compared to 16 funds that raised an aggregate \$2.93bn in 2008 and 10 funds that raised a combined \$5bn in 2007. Just three agriculture funds focused on Africa finished fundraising between 2007 and last year, the biggest being Emerging Capital Partners' \$523m vehicle. If successful, SilverStreet's fund would rank as the second-biggest in this category in recent years.

For more info write to [jbollen@efinancialnews.com](mailto:jbollen@efinancialnews.com)

## Conferences and Upcoming Events

### Global Conference on Aquaculture 2010

Bangkok, Thailand 9-12 June 2010

FAO in partnership with NACA and the Thai Department of Fisheries, are organizing this Global Conference on Aquaculture 2010, to evaluate where the aquaculture sector stands today and face the challenges and opportunities.

Deadline for abstracts/proposals: 30 March 2010

Website: <http://www.aqua-conference2010.org>

### FSBI Fish and Climate Change 2010

Belfast, United Kingdom 26-30 July 2010

This conference organized by the Fisheries Society of the British Isles will allow a wide variety of fish biologists (ecologists, fisheries biologists, physiologists & geneticists) to meet to present & discuss the issues of climate change effects on fish.

Website: <http://www.fsbi.org.uk/2010>

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