Aquaculture Association of Southern Africa

NEWSLETTER

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Aquaculture Institute of South Africa

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A Word from the AASA Chairman and the CEO of AISA

Etienne Hinrichsen chairman@aasa-aqua.co.za

The 8th AQUACULTURE ASSOCIATION CONFERENCE

It is with pride and excitement that we can report that the upcoming AASA conference is developing into an international event of great stature and importance. The conference, being held from the 22nd to 26th October 2007 will be held in the Cape Town Convention Centre in parallel with the Fish Africa and the Aquaculture Africa trade shows. This year's theme is:

"***LINKING RESOURCES TO MARKETS THROUGH TECHNOLOGY***"

Some highlights at the conference to look forward to include:

- Talks and Key Note sessions addressing international aquaculture development.
- Marine and freshwater field days.
- Social meet and greet function in the Predator hall of the renowned Two Oceans Aquarium on the 22nd of October.
- Many interesting and relevant presentations on a diverse range of aquaculture and related subjects.
- The formal AASA banquette at Krugmann's Grill in the Waterfront on the 24th of October.
- Workshops on disease, marine finfish, policy and legislation
- Training sessions on HACCP and disease management in aquaculture.
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With reference to the program and speakers we trust that this will be the most comprehensive Aquaculture Association conference yet. Apart from the organised activities, time has been allowed for interaction with other conference delegates. Having such a collection of aquaculturists together at one venue is a great opportunity to build up contacts and to gain insight into the many aquaculture disciplines that are now developing in the Southern African region.

If you have not yet registered for the conference, please do so by contacting the AASA office at info@aasa-aqua.co.za. Be there! - Don't miss out!

Dr. Lizeth Botes lbotes@ai-sa.org.za

In support of the upcoming AASA Conference, the **Aquaculture Institute of South Africa** (AISA) is funding the Social Meet and Greet Function which will be held on Monday evening the 22nd of October at 18:30 at the I&J Predator Exhibit, Two Oceans Aquarium, Cape Town Waterfront.

AISA & AASA would like to extend a warm invitation to everyone to join us at this function and look forward to seeing those from afar again.

To assist with catering arrangements for this event, it would be appreciated if you could indicate as soon as possible whether you'd be able to attend this function, at your earliest convenience, by forwarding an email to Natasha Marshall at info@aasa-aqua.co.za

The Editor's choice

Adrian Piers newsletter@aasa-aqua.co.za

Special issue of the Newsletter in advance of the AASA Conference

This issue is a supplementary edition of the Newsletter to ensure you are aware of, and have the details and latest information on the upcoming meeting. If you have not yet registered, a registration form is available under the Conferences section of this newsletter.

There will be one more issue at the end of September with the final news on the situation before the actual Conference. I am looking forward to seeing as many of you as possible at the event.

Africa is lagging way behind in developing its aquaculture infrastructure. The NEPAD "***Fish for All*** " summit looked at the problem and ways of addressing this, and the inevitable conclusion was that aquaculture in Africa must increase by 250% just to keep the already low present levels of fish consumption. The article below elaborates.

Editor.

New Attraction:
Aquaculture Training Programs

ANNOUNCEMENT & REGISTRATION FORM:

8th Conference of the

Aquaculture Association of Southern Africa

AQUACULTURE AFRICA

Linking Resources to Markets Through Technology

22 October 2007: Aquaculture Field Days
23 - 24 October 2007: Presentations and Papers
25 October 2007: Aquaculture Workshops
26 October 2007: Aquaculture Training Programs

FISH AFRICA 2007

Aquaculture Africa 2007

Presented by the Aquaculture Association at the Cape Town International Convention Centre and in concurrence with the Fish - and Aquaculture Africa Trade Shows

All registrations & payment are to be finalised by 30 September 2007

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Media Partner

fish farming international

Africas framework for investing in Fisheries and Aquaculture Science

By Dr. Sloans K. Chimatiro, NEPAD Senior Fisheries Advisor

While other parts of the world have harnessed scientific and technological advances to improve their fisheries and aquaculture production, Africa still lags behind due to general lack of capacity. Forty-two percent of the African research institutions are weak in fisheries and aquaculture, according to the Forum for Agricultural Research in Africa (FARA). This leads to a lack of common and strategic understanding of the challenges being faced by the sector and the importance of fisheries and aquaculture research for development. In recognition of the important role of fish in the fight against poverty and malnutrition, African governments in 2005 launched the NEPAD Action Plan for the Development of African Fisheries and Aquaculture.

The plan calls for urgent strategic investments to:

1. Develop the scientific capacity for conducting research across the production to consumption chain, including maintaining the genetic resource base and addressing food safety issues;

2. Improve the management of natural fish stocks;

3. Develop aquaculture production;

4. Enhance fish trade in domestic, regional and global markets.

Science-based, long-term management plans are critical to regulate and sustain wild marine and inland fisheries resources. Such management plans should take into account the trans-boundary nature of fish stock and the migratory feature of many fishing communities. More than 20% of Africa's fish is unavailable for consumption due to post-harvest losses; hence the productivity of African fisheries can be increased substantially by the use of simple and relatively cheap post-harvest technologies that build on fishers' own indigenous knowledge.

The expansion of aquaculture in sub-Saharan Africa can be realised if more technical capacity is built among researchers, extensionists and fish farmers to develop and adopt technologies for increasing productivity (e.g. quality seed and feed). Africa needs more capacity to develop the technical skills required to identify, adapt, and help fish farmers utilise existing aquaculture technology to produce more fish while minimising risks from diseases and new species. African scientists, extensionists and farmers should take advantage of the rapid advances in information infrastructure by investing in information and communication technology (ICT) to tap into the existing pool of global knowledge on aquaculture.

Although Africa has improved its participation in the global fish trade, the continent continues to be constrained by non-tariff (technical and non-technical) barriers. Therefore, Africa needs to develop science-based national and regional quality assurance capacity as well as standards for testing laboratories.

Adopted in 2005, the implementation of the Action Plan gathered speed in 2006 with the formulation of NEPAD FISH, a collaborative programme aimed at accelerating the contribution of science, technology and innovations to fisheries and aquaculture development in Africa. Science has been widely accepted as the best option to propel aquaculture's "Blue-Revolution" in Africa. The NEPAD Office of Science and Technology has designated four regional networks of NEPAD's Biosciences Initiative to spearhead the development of scientific capacity and technologies in fisheries and aquaculture. At the continental and regional levels, FARA has prioritised fisheries and aquaculture research within its remit of agriculture research, technology dissemination and adoption. In East and Southern Africa, the Regional University Forum (RUFORUM) has identified aquaculture and fisheries as a priority area for post-graduate training. At national level, governments are striving to put in place strategies to improve scientific innovations in the sector.

The Technical Centre for Agricultural and Rural Cooperation (CTA) has undertaken to support the fisheries sector in Africa by coordinating a regional network of fisheries scientists and managers to develop a policy brief on fisheries science, technology and innovations. This policy brief aims at guiding policy-makers in science-based decision-making.

NEPAD and its partners recognise the importance of science in fisheries and aquaculture development and have prioritised research, capacity strengthening and information dissemination. In order to integrate research, academic training and dissemination of technology, there is a need to review curricula at all levels of training to focus on national development priorities in fisheries and aquaculture. Improved human capacity is imperative for sustainable fisheries and aquaculture development because good quality human resources will result in the development of more efficient technologies, legislation and management plans. We call upon cooperating partners, including research and philanthropy institutions, to support national governments to strengthen their fisheries and aquaculture scientific and training capacity in order to safeguard the vital source of food, nutrition and livelihood.

Since time immemorial, fish has played an important role in the life of Africans. Archaeological finds in Egypt have shown paintings of men using fishing rods. Thousands of years later, fish continues to be central to Africa's needs. Currently Africa produces approximately 7 million tons of fish each year. Of this approximately 4 million tons is harvested from oceans and seas, and around 3 million tons comes from lakes, rivers and flood plains, known as inland fisheries. This fish sector makes vital contributions to almost 200 million Africans who depend on fish for their food and nutritional requirements. While 3 million fishers and 120,000 fish farmers are directly involved in producing fish, an additional 7 million people rely on the sector as processors, traders and employed in other industries allied to fisheries. Recently, fish has become a leading export commodity for some African countries, with an annual export value of US$ 2.7bn.

However, there are concerns that these benefits are at risk as the production of fish from oceans, seas, lakes and rivers is reaching limits. Furthermore, despite decades of technical and financial support, Africa has made little progress in fish farming as compared to Asia.

Letters to the Editor

Crayfish articles wanted

Hi All,

This is the first call for contributions to the September issue of Crayfish News.

The deadline for submissions for this issue will be Friday, September 14th. The completed issue will be posted to the IAA website by the end of September for download by members. Please send in any crayfish-related newsworthy items. In particular, we are looking for short research articles, crayfish-related news from your area, meeting announcements, meeting summaries, new book announcements, recent crayfish literature and/or bibliographies, photos, or any other items that may be of interest to members of the society. If you would like to highlight your own crayfish research, please send in a short article (2-4 pages, plus images), as I'm sure other members would be interested to hear about what you are working on.

For more information on this see http://iz.carnegiemnh.org/crayfish/IAA/cnsubmit.htm

Jim Fetzner, Editor, Crayfish News and International Association of Astacology secretary

Fry and Feed info requested

Dear Editor,

I would like to enquire about feed and fry producers for Tilapia and Catfish in SA. I have been growing bass and bream for 8 years in Israel and Turkey in sea cages, and would like to start a project in SA. I am starting to build a business plan, but need feed, fry prices. It also seems very difficult to find market prices for these two types of fish.

Your help will be much appreciated.

Yours thankfully.
Jaco Coetzee jacolea@hotmail.com

Abalone

Aquaculture brings Abalone back to British Columbia menus

By Judith Lavoie in the Times Colonist

But stringent regulations governing the at-risk species hindering growth of Bamfield project. For the first time in decades, the succulent meat of the northern pinto abalone is starting to appear legally on high-end menus. Northern pinto abalone grow to a harvestable size as they cling to plastic sheets at the Bamfield/Huuy-ay-aht Community Abalone Project. But John Richards, president of Bamfield/Huuy-ay-aht Community Abalone Project, the source of cultured abalone, spends almost as much time dealing with stringent Department of Fisheries and Oceans rules as caring for his abalone tanks at Bamfield Marine Sciences Centre. It's frustrating, said Richards, who finds many restaurants and investors don't want to deal with the bureaucracy. "It's like having a cop following you down the highway. You know you're not doing anything wrong, but it's a worry," he said. Divers overharvesting the iridescent shells and prized meat of northern abalone in the 1970s and 1980s pushed populations onto the threatened list. Although harvesting has been banned since 1990, populations of the long-lived shellfish are not recovering, and poaching is believed to be a major part of the problem. The Bamfield experiment, which started seven years ago as a joint project between the Marine Sciences Centre, First Nations and the community, aims to re-seed dwindling populations. The second part of the project is culturing northern abalone for sale, to help fund stock restoration and provide employment in the tiny community of Bamfield on the west coast of the Island near Ucluelet. This is the first year the cultured abalone have reached a size where they can be sold, Richards said, as he showed off tanks of nearly full-grown abalone, with orange feet clinging to wavy plastic sheet

Problems started in 2003, when abalone were listed under the new Species at Risk Act. The species act does not differentiate between wild and cultured abalone, meaning it is illegal to kill or sell any abalone.

"We screamed and kicked and cried and eventually got them to issue a special permit to allow us to sell abalone," Richards said. "DFO then attached 17 conditions and we found investors quickly turned and exited the room."Cultured abalone have to be sold in the shell, rather than as vacuum-packed meat as first envisaged, and shells have to be marked. Buyers then have to return every shell, Richards said."That eliminates selling to the retail market, because how do you get the shell back?" he asked."They said the shells could be used to get poached abalone into the market. What are they going to do -- crazy-glue them into the shells?"Andrew Thomson, DFO acting director for aquaculture management, agreed the lack of differentiation between cultured abalone and naturally raised abalone in federal rules is a problem, saying the department is "actively" seeking to resolve the issue.The long-term solution is probably changes to the legislation, but in

the meantime, there could be clarification, said Thomson, adding rules about shells are necessary to prevent poached abalone from reaching the market. Even with marked shells, it could add an element of doubt in cases that go to court, he said."It is all done with the best of intentions of protecting an endangered species."The prestigious C Restaurant in Vancouver is the first to have northern abalone on the menu and executive chef Robert Clark said the shell hassle is worth it. "There are lots of obstacles, but nothing we can't overcome," he said. "The price is quite prohibitive, but it's a thrill for customers to taste it and for staff to work with it. It's a wonderful product."The restaurant sells abalone for about $30 apiece -- about two to three ounces of meat.It's a bonus that the money is used to reseed wild stocks, Clark said.Out-planting of wild stock, which is kept separate from cultured abalone, is working well, Richards said.About four million larvae and 200,000 juvenile abalone have been placed at three test sites and initial survival rates are good.

Catfish

Environmental standards for Catfish

From Fishupdate.com

Pangasius producers and buyers, as well as other stakeholders from throughout the world will meet in Ho Chi Minh City, Vietnam from September 26-27 to begin developing standards for certifying Pangasius aquaculture products, one of the fastest growing types of aquaculture.The main purpose of the meeting will be to identify and agree on the six to eight main environmental and social impacts related to the farming of tra and basa, the two key market species in the Pangasius family. The process, called the Pangasius Aquaculture Dialogue, will continue through 2008, when participants will meet to develop credible, measurable and voluntary standards designed to minimise the key impacts they identify in September. Once finalised, the standards will be handed off to a new or existing certification entity to manage the system.

“We are excited about starting this process,” said Dr. Flavio Corsin, who will coordinate the dialogue for World Wildlife Fund. “Pangasius farming is one of the fastest growing types of aquaculture in the world. It is critical to minimize Pangasius farming’s impact on the environment and society, while also accommodating the market demand for this type of fish.”

Crayfish and Lobsters

No submissions

Eels

Australians have been farming Eels for 8000 years!

At the Budj Bim National Heritage Landscape at Lake Condah near Heywood, 350 km west of Melbourne a dry, shallow lake surrounded by wetland hit the headlines when scientists discovered indigenous people had been farming eels there for 8000 years.

Tests by Monash University's school of geography and environmental sciences reveal that Australian Aboriginal people started digging channels from Darlots Creek to a series of interconnected ponds around Lake Condah 8000 years ago. As the water levels rose and fell, eels were forced to move along man-made channels, or races, to other ponds. Eels were caught in woven reed traps placed in the races.

Chef Bruce Edwards made a tasting plate of eels caught in Darlots Creek. He usually has an eel dish on the menu. "This eel is from this area. It is part of the culture and landscape," he says. "Victorians exported tonnes of locally caught smoked eel to Europe every year but we're just beginning to appreciate it."

Full story at:-

http://www.smh.com.au/news/good-living/wild-harvest/2007/08/27/1188066997938.html

Ornamentals

Evolution caused by a parasite in Malawi cichlids

From Nature

African fish are being driven along evolutionary paths by its adaptation to parasites. An old puzzle relating to the East African cichlid fish species may have been solved. For decades, evolutionary biologists have been puzzled as to why the fish do not interbreed, despite living side by side and being comprised of hundreds of closely related species.

Now, a team from Université Laval in Canada, the University of Hull and Cardiff University in the UK and the Donana Biological Station in Spain have studied two of the species *Pseudotropheus emmiltos* and *Pseudotropheus fainzilberi* which are found in the north western part of Lake Malawi. Previously, the only known difference was the colour of the dorsal fin. Now, research into mate selections has demonstrated that the fish recognise 'their kind' through olfactory communication (smell) rather than aesthetics. In addition to this, the findings demonstrate that parasites found on the two species were significantly different. As some of the genes known to influence mating behaviour through olfaction are sensitive to molecules produced by infectious agents they can smell how effective their potential offspring's immune systems would be to certain infections.

"The precise role that this divergence played in the evolution of reproductive isolation has yet to be studied," commented Louis Bernatchez, co-author of the study…"but it offers an exciting new perspective in the study of African cichlids speciation."

Oysters & Mussels

Export Markets Open for Namibian Oyster Farmers

By Brigitte Weidlich in the Namibian

Namibia will soon be able to expand its fledgling aquaculture industry and export oysters to the Far East, with Singapore the next destination after China and Hong Kong. Although the first local oyster cultivation was started 20 years ago by Swakopmund business tycoon Juergen Klein and has expanded to 42 oyster farms in the Atlantic Ocean near Luederitz and Walvis Bay, stringent

health regulations in European countries and the US and the lack of a local testing laboratory have hampered the industry. This will now change, according to the outgoing Permanent Secretary of the Ministry of Trade and Industry, Andrew Ndishishi. "We have now hired offices in Walvis Bay and staff was appointed, while the equipment has been set up," Ndishishi told The Namibian this week. "The testing lab must run for six months before it can receive certification and international accreditation, which will be early next year," he added. "I am on my way to Singapore to finalise export agreements and a team of exports from Singapore will come to Namibia this month still to test our ocean waters and examine our oyster plants so that we can obtain the green light for export."

At present, oysters are sent to a laboratory in South Africa. Namibian oyster production amounted to six million oysters in 2004, bringing in N$12 million. Joe Gross, former proprietor of Joe's Beerhouse, who recently turned to oyster production, said there was a potential to grow up to 50 million oysters a year. Currently, the cocktail-size oysters produced in Namibia fetch around N$3 each, but they could easily fetch N$12 each when grown to bigger sizes. "The market potential is huge," Gross told reporters on Friday after informing President Hifikepunye Pohamba at State House about the opportunities and export constraints of oyster farmers.

Namibian oysters are renowned for their top quality. About 70 per cent of Namibia's total oyster production is exported to South Africa. Some are flown to China and Hong Kong, where there are fewer import restrictions than in Europe, while the rest are consumed locally. "Namibia has a definite market advantage it should exploit because oysters grow three times faster here than in Europe," according to Gross. "In France, oysters take nearly three years to grow to the preferred market size and in Namibia only 9 to 12 months." Oysters are not naturally found along the Namibian coast and all spat (from which baby oysters are grown) had to be imported from overseas originally. In the meantime, some local oyster companies have started producing their own spat. Both the pacific oyster (Crassostrea gigas) and the European oyster (Ostrea edulis) do well in Namibia. "This has to do with the unpolluted waters and the nutrient-rich Benguela Current; coastlines along France and Asia are quite polluted," according to Gross. He told The Namibian after the briefing at State House that the strict European health regulations require EU experts to regularly test Namibia's ocean waters for 24 months, and convince themselves of the quality standards of the newly established laboratory, before oysters can be exported there.
NamPort has made some 1 250 hectares of sea space available for oyster farmers outside the Walvis Bay port area and three different oyster companies are making use of the space, called Aquapark. Oysters are grown either in crates or mesh bags along lines suspended in the ocean or from rafts. It is quite labour intensive, as the bags and lines must be changed every few weeks when the oysters outgrow their bags or crates. Sorting the oysters for the market is done by hand too.

With the laboratory finally in place, the Namibian oyster industry will now be able to conquer international markets.

Prawns

Medical application for shrimp by-products

By Michael Bengwayan in the Brunei Times

Chitosan or chitin is a form of fiber chemically processed and extracted from shells of shrimps, prawns, crabs and lobsters. Like other forms of fiber such as oat bran, chitosan is not well digested by the human body thus it helps cleanse unwanted tissues like fat. According to the reputable New York University School of Medicine (NYUSM), chitosan has the ability to bond with undigested fat and carry it out in the stool. For this reason, it has been tried as an agent for lowering cholesterol and reducing weight. In addition, chitosan has been tried as a treatment for kidney failure and as an aid in wound healing especially against the bacteria Streptococcus and vaginal infections.

The Center for Biomedical Research and Population Council (CBR-PC) in New York also confirms that chitosan, having the ability to ability to bind fat in the intestines, is an effective treatment for high cholesterol and weight loss. Thus, CBR-PC said chitin-chitosan can be taken in as a food supplement because it can reduce plasma cholesterol and triglycerides. But it warns that prolonged intake of chitosan will lower vitamin and mineral levels in the human body. .

Some shrimp and prawn producers are not aware of the potential money they can earn from the crustacean shells of their catch. Estimates provided by the Brunei Department of Fisheries, Ministry of Industry and Primary Resources put the value of the fisheries industry at $200 million per year, $71 million is contributed by the aquaculture industry especially shrimp and prawn production. When the shrimps and prawns are shelled, these are discarded as wastes. Shrimp waste in Brunei comes from the processing of shrimp paste and crackers, a popular snack produced chiefly by housewives. These same people can supplement their income by processing chitosan because machines and semi-automation are being introduced for small scale food processors. In the case of commercial operators who usually discard off head and tails of shrimps, they can start their chitosan shrimp processing activities catering for the export markets. Chitosan's importance goes beyond biomedicine. According to NYUSM, chitosan is also saving lives for those in war. Wounded American soldiers in the sporadic battles in Afghanistan and Iraq are using chitosan bandages that stop bleeding in 30 seconds. Conventional bandages usually cannot fully stop bleeding but chitosan bandages don't leak blood after they seal up the wound. In effect, the positively charged chitosan material bonds with red blood cells and forms an artificial clot that stops hemorraging, thus increasing patient survival. The company making the bandages is called Hemcon Medical Technologies Inc of Portland, Oregon. It has signed a US$29 million contract with the Department of Defence to provide such bandages through 2008.

Agriculture-wise, chitosan is used primarily as a plant growth enhancer, and as a substance that boosts the ability of plants to defend against fungal infections. It is approved for use outdoors and indoors on many plants grown commercially and by consumers. In the world's water-deficient areas, chitosan is playing a great role. Water filters are being made with chitosan particles, an effort supported by the International Water Management Institute and the Asian Development Bank. Chitosan filters fine sediment particles in water by causing them to bind together and is subsequently removed, thus resulting to clean water. Chitosan also removes phosphorus, heavy minerals, and oils from the water.

So the next time you eat shrimp or prawn, don't throw those shells away. Nibble them.

Tilapia

Rwanda tries Tilapia cage culture

From East African Business Week

Some 10,000 young tilapia weighing 30gms each are to be imported from Uganda to Rwanda. This will be Rwanda's country's biggest fish cage pilot study, according to a leading Rwandan agronomist. The managing director of Genesis Ltd, Mr. Gil Nossan, an agricultural and livestock specialist, said te fish cage study is pioneered by a private developer and will be undertaken in Lake Muhazi in the eastern province. "We are in the process of importing 10 tonnes of fish feed for this pilot study with each tonne going for US$1,200. This is the best way to grow fish. Local people invest in fish ponds and harvest little. Fish ponds require a lot of power to mix the water and there is a problem of lack of oxygen," he said. Nossan further explained that the aluminum cages will be inserted in the right spots of the lake. The water will mix naturally and thus provide oxygen in the cages. The fish feed, imported from Israel, will be placed afloat within the cage, which will be two thirds submerged in water and a third above the water. The fish feed is dropped periodically within the cage depending on the fish age and size. The feed is routinely changed after two months.

A fish cage specialist working with USAID Uganda was recently in the country to ascertain the quality of the fish feed samples that were brought in and he gave the nod. Harvesting is expected in six months. The 10,000 fish imported weighing 30gms are expected to grow to 500gms within the six month period.

Kenya fish exports under threat

By Dominique Patton in Business Daily

Britain has embarked on a grand fish farming project in response to rising demand for locally-produced fish products signalling a possible market shrinkage for Kenyan fish exports. Analysts said the project, which mainly targets tilapia farming, poses the latest threat to yet another of Kenya's key exports to Europe after similar consumer sentiments kicked off a bitter trade spat between Kenya and United Kingdom supermarkets over the role of horticultural exports in ongoing global warming debate. Under this project, tilapia, a native to Africa, could increasingly be produced in the UK, making market penetration more difficult for imported products.

Kenya exports Sh6 billion worth of fish products to Europe with tilapia, which mainly comes from the Lake Victoria basin accounting for nearly 40 per cent of the exports. The meaty, white fish is already farmed in large quantities in Asia and exported to Europe but it is only in recent years that the UK market has shown an interest in locally produced tilapia. UK's move comes as Kenya's fishing sector is also looking at boosting tilapia production to counter falling demand in Europe for Nile Perch. Although it is less costly to produce the fish in Kenya than in the UK, the first entrants to this market say some consumers are prepared to pay more for locally produced fish. "Currently the market for tilapia in the UK is quite segmented," explains Dr Francis Murray, research fellow at Stirling University's Institute of Aquaculture. "It is divided between imports for frozen fish, a large ethnic market and a niche market for high quality, locally produced tilapia. Demand for that segment is increasing and supply can't keep up."

While tilapia sells at £3 (Sh400) per kg at London's Billingsgate fish market, some producers get up to £5 (Sh670) per kg in the niche market where consumers are keen on environmentally friendly credentials and stringent traceability that comes with fish reared nearer to home. The new tilapia farms use a closed re-circulation system that allows most of the water to be reused, saving substantially on energy as the water conserves the heat needed for the warm water species. The contained system, which only adds a small amount of replacement water each day, also means a high level of biosecurity. In addition, tilapia consume much less protein than other farmed species, adding to its ecological advantages. "Most species produced in the West are top-end carnivores that are heavily reliant on fishmeal but tilapia can survive almost entirely on a vegetable diet," says Dr Murray.

Dr Murray and his colleagues at Stirling are currently developing a small-scale production system for tilapia, which they claim could be a profitable business for farmers looking to diversify. Farmers could use existing farm buildings and infrastructure to set up the indoor fish farms. An appeal through a farming magazine asking for farmers willing to test the production system elicited a strong response. "The profits are relatively modest but there is potential to scale up rapidly. Tilapia can reach harvest in six months and farmers also see the integration options using heat from other sources." In Europe, where tilapia is better known, local production is set to be on a bigger scale. VitaFish in Belgium started breeding tilapia in November last year and expects to produce around 3,000 tonnes of fresh tilapia by next spring. Sophie Jonckheere, from the company's marketing department, said its first tilapia fillets will be available in Belgium within the next three months and neighbouring countries by next year. The rise of tilapia production in Europe is being supported by a drive towards sustainable fishing as well as demand for locally grown food. Ms Jonckheere explains: "The proximity of European customers means that transport will have a minimal impact on the environment, in contrast to the tilapia which at present are almost exclusively imported from the Far East, South America and Africa."

Demand for imported tilapia will however remain strong as the species is increasingly used as a substitute for wild white fish, according to marketing experts at Seafish, the UK government funded industry body. Tilapia exports to Europe reached an estimated 8,400 tonnes in 2002, compared to only 889 tonnes in 1996. Although Britons are more conservative than other Europeans in their fish tastes, habits will be forced to change as wild stocks decline. Tilapia's bland taste makes it versatile for use in value-added processing and it has also found strong demand in some high-end markets like Britain's gastro-pubs. UK seafood processor Young's started selling another white fish substitute —Pangasius —on retail markets in the UK this year. A spokeswoman from the firm said the fish, imported from Vietnam, was starting to be accepted by consumers.

New suppliers of tilapia, whether UK-based or exporters in Kenya, will gain greater market access if they can carry eco-labelling showing that they have been produced to quality standards, added Dr Murray. Currently, Taiwan and China are the most important suppliers of deep-frozen tilapia fillets to Europe, while fresh fillets come mainly from Zimbabwe and various countries in Central and South America.

Two sides to every Tilapia

By Walter Nicholls in the Washington Post

It is mild and Eco-friendly. Consumers have caught on, but chef are not hooked yet. It's the fish that chefs love to hate but shoppers prize, and both for the same reason: This fish isn't fishy. The consumers are winning the debate, though, and tilapia is swimming its way to ubiquity, thanks to selective breeding programs, improvements in farming efficiency, skilled marketing and the commitment of some big grocery chains. That it's ecologically sustainable and relatively cheap doesn't hurt, either. In just a few years, Americans' annual consumption of tilapia has quadrupled, from a quarter-pound per person in 2003 to a full pound in 2006. The National Marine Fisheries Service now ranks it as the fifth-most-consumed seafood in the nation, still far behind shrimp at 4.4 pounds per person a year, but growing fast. Researchers think tilapia is destined to be one of the most important farmed seafood products of the century.

But then there's the taste, or lack of it. What plenty of customers appreciate as versatility is also what gives tilapia a bad name among chefs who think mildness isn't a virtue. Bob Kinkead, chef-owner of Kinkead's in Foggy Bottom and Colvin Run Tavern in Vienna, didn't pull any punches when asked about tilapia, calling it "insipid," "spongelike" and "inferior." "Not in my restaurant," he declared. "Never sold it, won't sell it." At Seven Seas Restaurant in Rockville, though, shimmering tilapia have been making their way from tank to table for 20 years. When a customer orders, say, fried tilapia in Hunan sauce, a server first carries the live, flopping fish to the table in a plastic bucket. In the time it takes to finish the shrimp wonton soup, out comes the same specimen, now crisp and spicy, that was swimming 20 minutes before.

In this country, owner Edward Shen could be considered a tilapia pioneer. In the mid-1980s, the average American had never heard of this firm-fleshed African native, also known as the Nile tilapia. "In the beginning, I had to go to a little house on the Eastern Shore, where they were raised in the back yard," says Shen, who says he sells about 100 whole fish per week. Tilapia has been farm-raised as far back as ancient Egypt, and now such farming occurs in more than 85 countries. The fish is widely available in many chain restaurants and in most supermarkets, where it's sold freshly filleted, frozen and, in some stores, live. Shen's tilapia travel from an aquaculture farm in southern Virginia to the kitchen door at Seven Seas in a truck equipped with aerated holding tanks. At Red Lobster restaurants, where tilapia is served grilled, blackened, broiled or stuffed with lobster and crab meat, sales of the fish have doubled over the past three years. "With customers, it's one of the most popular seafood products," says company spokeswoman Wendy Spirduso. "Americans tend to like mild-tasting fish, and our chefs call it a blank canvas, open to changing flavours." Chef Jeff Black of the Black Restaurant Group, which includes the seafood bistro BlackSalt in the Palisades, is one of the few upscale chefs in Washington to use the fish, which can sometimes be found on his lunch menu. "Fried, in a fish taco, it's delicious," Black says. "Raised properly, it's a nice fish." Tilapia's biggest boom is in imports, which make up as much as 95 percent of tilapia consumed in this country: 349 million pounds last year, up 17 percent from 2005. The overwhelming majority of the imports are frozen fillets from China. In June, the U.S. Food and Drug

Administration imposed a ban on imports of five types of farmed seafood from China, including shrimp and catfish, but tilapia imports were not affected. Fresh fillets come primarily from Ecuador, Honduras and Costa Rica. There is no tilapia season; the fish is available year-round. Wild-caught hybrids are common in warm waters of Africa and Southeast Asia, but farmed varieties, raised in a controlled environment, are said to have a more desirable flavour. Most of the U.S. farm-raised tilapia, about 20 million pounds per year, is sold live at Asian markets and restaurants in this country. In the mid-Atlantic, Blue Ridge Aquaculture in Martinsville raises nearly 4 million pounds each year. At retail, imported fresh fillets sell for about $5 to $6 per pound, frozen fillets from China for about $2 per pound. Tilapia from U.S. farms, where operating costs are higher, is the most expensive, about $8 to $10 per pound. In comparison, at fishmonger M. Slavin & Sons in Arlington, fresh flounder sells for about $12 per pound, and fillets of fluke, another mild, white-fleshed fish, go for about $13 per pound.

Kevin Fitzsimmons, a professor of environmental science at the University of Arizona who has worked with tilapia farms for 25 years, traces the fish's turning point to the early 1990s. "That's when you had the selective breeding programs, in Brazil, in Thailand and in the Philippines," Fitzsimmons said before leaving recently to work on aquaculture restoration projects in Indonesia. "The average size went from under one pound to two pounds, producing center-of-the-plate portions with fillets of five to seven ounces. That made a big difference." As the tilapia grew in size, so did the aquaculture farms in developing countries: above and below hydroelectric dams, in lakes and in raceways. Larger, inland and more technologically advanced indoor systems were developed with little, if any, pollution risks.

The Monterey Bay Aquarium's consumer guide to ocean-friendly fish gives U.S.-farmed tilapia its "best" rating and Central American-farmed tilapia a "good" rating. It advises consumers to "avoid" tilapia imported from China and Taiwan, where it says "pollution and weak management are common." Chef Barton Seaver, who promotes the use of eco-friendly seafood at his new Hook restaurant in Georgetown, says that "as far as sustainability, it's where we need to go." He calls tilapia "a great choice: a vegetarian fish that is fast-growing and largely disease-resistant." Still, he prefers wild-caught fish and says tilapia is not up to his restaurant's "taste standards." Seaver instead serves delicately flavored tautog from waters off South Carolina and more assertive barracuda from Trinidad and Tobago. Unlike farm-raised salmon that are fed fish meal and have been shown to contain polychlorinated biphenyls (PCBs), contaminants and antibiotics, tilapia are hardy herbivores that grow well in high densities. Tilapia produced in China, where there are hundreds of thousands of tilapia farms and more than 100 processing plants, can sometimes have an off-, muddy or grassy taste after consuming certain types of algae. But Fitzsimmons disagrees with the Monterey Bay rating and says that, for the most part, "the Chinese do a pretty good job" with tilapia.

Marketing executives at Rain Forest Aquaculture, a Costa Rican company that was among the first to bring fresh tilapia fillets to this country in early 1990, credits supermarkets with creating the tilapia explosion. "It was retail that drove the growth," says spokesman Jim Nunneley. "Grocery store chains like Costco and Wegmans saw the potential of a mild, white-fleshed fish when no one knew what it was, and they have done a tremendous job. The pioneers were not chefs, who don't want anything to do with farm-raised fish." Still, early on, restaurateurs such as Shen of Seven Seas recognized that, for Chinese cooking, tilapia was perfect. "You can taste the other flavors and ingredients, the ginger and garlic, and [tilapia] are so easy to marinate," says Shen, a native of Taiwan, where he says live tilapia sales are common. "Live tilapia: That's as fresh as you can get."

But that's not Shen's only reason for serving them. "They are tough, consistent and the only fish that survives in the tank," he says. "Try that with a rockfish, and they are upside down."

Full article with links

http://www.washingtonpost.com/wp-dyn/content/article/2007/08/07/AR2007080700470_pf.html

Trout and Salmon

No submissions

Other

Uganda fish exports of Nile Perch fall

By Macrines Nyapendi in the New Vision

Fish export earnings for the first half of the year have dropped by $7.9m to $61m from $69m during the same period last year, the fisheries department has said. The assistant commissioner for fisheries, Nsimbe Bulega, said the slump was due to the volatile shilling, the closure of two fish processing plants and stiff competition for raw materials at the landing sites. “Some of our members have closed due to high production costs and a volatile shilling. The competition for raw materials at the landing sites is also solid and local processors are losing to their Kenyan counterparts who offer better prices,” Bulega explained. Gomba Fishing Company, the biggest processing plant owned by the Mukwano Group, closed due to high production costs while Uganda Marine Products was gutted by fire. Bulega added that this year’s FOB prices had tumbled to $3.9/kg from between $5 and $4.2/kg last year due to low demand. A total of 14,933.24 metric tonnes of fish were exported between January and June this year, while 15,870.26 tonnes were exported during the same period last year. Compared to the same period last year, this year’s export volumes fell by 937.02 tonnes. He said competition for the Nile Perch is so high that it has mounted much pressure on the species. The average size of fish caught now is smaller due to the pressure. Monthly exports are bound to drop as the months of June, July and August are referred to as lean months because of the dry spells experienced.

“The need to embrace fish farming is inevitable especially when you look at the White Nile Perch’s dwindling stocks amidst high demand. Fish exports cannot be sustained without engaging in commercial aquaculture,” Bulega recommended. He warned that deforestation and massive encroachment on the lakes’ catchment areas was depositing a lot of silt in the lake, threatening its eco-system.

Future of tuna industry depends on aquaculture

From Fish Update

The future of the tuna industry depends largely on the development of successful aquaculture, according to a new Glitnir seafood industry report. The report shows that the global catch of tuna has stagnated and the stocks of the most popular subspecies are currently either fully exploited or even in a stage of depletion. Glitnir, the globally leading supplier of financial services to the seafood industry, releases its new report on the tuna industry today. The report provides an analytical overview of the current main developments in the tuna industry worldwide. Tuna is the fourth largest fisheries product in terms of international trade. Found in all major oceans, and a popular seafood all over the world, tuna's main markets are the USA, Europe and Japan. The country with the highest tuna consumption is Spain, with a per capita consumption of 3.3 kg/year. Price and availability vary greatly between the tuna subspecies. Demand for canned tuna is decreasing, while fresh tuna, especially sashimi-grade products, is gaining in popularity in Europe and the USA. According to the report, global tuna stocks are currently more or less fully exploited, and for some of the scarcest species of bluefin tuna, limited supply has pushed prices to a level that consumers are barely able or willing to pay.

Plant crops to clean up aquaculture waste

By Mary-Lou Considine in Science Alert

Integrated aquaculture has been used for centuries in China, where farmers have grown rice and fish in the same irrigated plot. Now this small-farm practice is beginning to show promise in the West at a larger scale. Fish are efficient converters of lowgrade feed into high-value protein. The waste they produce can be used to fertilise plants; plant uptake of these nutrients, in some systems, is used to clean the water for recycling back to the aquaculture module. Environmentally, this means zero or little wastewater, reduced reliance on artificial fertilisers for plant crops and added value from the water used. In Australia, a few researchers and entrepreneurs have been investigating different ways of using nutrient-rich water from aquaculture to supplement hydroponic operations – a form of integrated aquaculture known as aquaponics'. Tailor Made Fish Farms near Port Stephens, NSW, was established by former Sydney builder Nick Arena nine years ago, and is the largest commercial-scale freshwater aquaponics operation in Australia. The company produces 37 tonnes of barramundi a year, mainly for the lucrative Sydney restaurant trade. The barramundi are raised in ten 30 000-litre tanks, each housing 3000 fish. Around 10 per cent of the water that has circulated through the tanks is drawn off to fertilise lettuce, bok choy, silverbeet and herbs grown in hydroponic channels. The company produces the equivalent of 100 000 heads of lettuce a year.

But the barramundi is the real earner. So strong is market demand for the fresh fish, says Operations Manager Peter Francis, that Tailor Made is building a new facility that will produce another 50 tonnes of barramundi a year. The company has received interest in its technology from the US, Africa, the Middle East, Asia and Europe. While Tailor Made has approached aquaponics from a large-scale aquaculture perspective, Dr Wilson Lennard of Minnamurra Aquaponics in Melbourne has developed a compact pilot commercial scale system in which water is completely recycled through both the aquaculture and hydroponics modules. In this system, solid waste from the fish tanks is diverted to a worm farm, which can also supply fish food, while the liquid is used to feed hydroponically grown herbs and leafy green vegetables. The water, depleted of nutrients by the plants, is then oxygenated and recirculated to the fish tanks. An important component of any aquaponics operation is the bacteria-based biofiltration compartment. Nitrifying bacteria are the 'work horses' of the system, says Dr Lennard, converting harmful ammonia-based fish waste to harmless nitrates to feed the plants. 'This bacterial conversion is especially critical for Australian aquaponic systems, as our native fish are relatively sensitive to these metabolic toxins,' he adds. Dr Lennard has managed to successfully trial Murray cod, a high-value culinary species that he now sells to local restaurants. He has also been selling 50–60 kg of basil a week to a pesto manufacturer. Currently, Dr Lennard is talking to an overseas aid organisation about setting up simple, low-tech aquaponics systems at orphanages in India and Thailand. Aquaculture researcher Professor Rocky de Nys of James Cook University sees a big future for aquaponics, particularly its integration with the high-volume hydroponics operations that service Australia's capital cities.
He has been researching other forms of integrated aquaculture, where waste from marine aquaculture operations such as barramundi farms is used to fertilise seaweed 'crops'. 'You can take nitrogen, a waste product, out of the aquaculture waste stream by growing seaweeds.
'In Canada, Europe and Asia, large operators are combining fish farming, such as caged salmon in Canada, with seaweed farming, for example, kelps.

'In North Queensland we are looking at barramundi or prawn farms and integrating green algae for use as foods and fertilisers. 'Seaweed products are used in food processing as polysaccharides, agar, carrageenan and food stabilisers,' adds Professor de Nys. 'The global market is worth billions.'

Feeds

No submissions

Environment, Health and Disease issues

World Trade Organisation to arbitrate on prawn dispute

By Leigh Dayton.

Thailand will join nine other ASEAN nations to haul Australia before the World Trade Organisation over tough new restrictions on prawn imports. The group which includes China, Vietnam, Taiwan, Indonesia, Malaysia and the Philippines claims the quarantine requirements announced last June are a non-tariff barrier to trade, aimed at protecting the $51million local industry from the $2 billion import industry. The move to take Australia to the WTO disputes panel in Geneva in October follows last-ditch discussions in Canberra between Thai officials and the Australian regulator Biosecurity Australia. A spokesman for BA confirmed the meeting. "We explained the new measures," he said. By the end of September all raw prawn imports will be banned and additional environmental safety tests will be required for prawn cutlets and prawn meat.

According to Thai officials, the requirements are unnecessary, onerous and scientifically unsound. Bangkok-based shrimp biologist Tim Flegel, with Mahidol University, accompanied the three Thai officials to the meeting. He said it was "very likely" that Australia would lose the case, especially as the WTO's World Animal Health Organisation (OIE) was revising its guidelines on transferable diseases to specifically exclude prawns sold for human consumption from the so-called "disease-risk pathway". A member of the Thai delegation told The Australian that the Association of Southeast Asian Nations group was likely to seek compensation for losses. If Australia loses the dispute, it may face compensation payments of $500 million for every year the restrictions last, according to an estimate by Harry Peters, president of the Seafood Importers Association of Australia, an industry body whose 40 members handle about 80 per cent of seafood imports. "This won't be the first WTO challenge Australia has lost in regard to seafood imports," Mr Peters said, pointing to the 1999-2000 salmon war between Australia and Canada. In that case, the Tasmanian salmon industry pushed the state to unilaterally ban imported Canadian salmon on the grounds that it posed a risk of disease to local fish. Two shires in Victoria and one in NSW also threatened bans on Canadian fish because of fears that disease would strike local trout. After the WTO found that Australia had breached its free trade obligations, Canada threatened to retaliate against $53million worth of Australian products. Canberra was forced to intervene.

A spokesman for Trade Minister Warren Truss said the Government would robustly defend any action brought against Australia by the prawn exporters. "Every decision we make is science-based and WTO-compliant," he said.

Last week, Mr McGauran released preliminary results of a survey of seafood imports conducted by the Australian Quarantine and Inspection Service. Results showed that 31 per cent of a sample of prawns, fish, crabs and eels from Asia contained low levels of antibiotics and/or anti-microbial agents. The residue was not desirable, but posed no direct risk to human health. A similar study reported last year in the Journal of Applied Microbiology also found antibiotic and anti-microbial contaminates in Australian-farmed fish, crustaceans and crab larva. "No antibiotics are registered for use in aquaculture in Australia, but these results suggest that there has been significant off-label use," concluded the University of South Australia team.

Research matters, Reviews & Training

Fish farming technology transfer doubles rural incomes

By Gerald Namwaza in the Daily Times

Scientists at the World Fish Centre have reported that an innovative project to encourage fish farming has doubled income levels of 1,200 households in Malawi. The Malaysian based fish centre reported in their multi year review that the project, which assists farmers engage in fish farming, has helped families hit by the HIV/Aids scourge more than treble their protein in take and income base. The project assists farmers by digging small rain fed ponds of about 20 metres by 10 metres on their land and raise fish species like tilapia, commonly known as Chambo. “These small fish ponds offer tremendous benefits to struggling farming families in rural Africa whose many challenges have been compounded by Aids,” reads part of the report.

Regional Director for World fish in Eastern and Southern Africa said the project had helped in the economic empowerment of rural masses, especially those affected by HIV /Aids. “The purpose of this project is to develop technologies and practices in fish production that are specifically suited for orphan and widow-headed households,” Jamu said. So far about 30 percent of the farmers in the programme are women and experts working with World Fish and World Vision teach them to raise and market their fish. The success of aquaculture in Malawi has prompted the organisation to expand the initiative to include 26,000 farming households in other countries like Mozambique and Zambia.

Fish has traditionally been an important part of diet and a source of income especially along the lake shore and major rivers but increasing population growth currently estimated at 12.1 million has reduced annual per capita fish consumption and income from fish sales.

Fish ponds in Malawi helping the fight against AIDS

The WorldFish Centre has helped 1,200 families who have lost breadwinners to AIDS to dig and run fish ponds in southern Malawi's Zomba district. The small landlocked southern African country relies heavily on subsistence farming. But HIV/AIDS, erratic rains, overpopulation and soil erosion are taking a big toll, making it hard for farmers on tiny plots to survive. With Malawi's main lake overfished, people are losing a big source of protein. In the 1970s they ate 14 kilos of fish per person a year; now they consume just four kilos.

Full story at:-

http://www.economist.com/world/africa/displaystory.cfm?story_id=9725881

Regulatory matters

A Fight about Fish Farms

By Marc Gunther, Fortune Magazine

With the U.S. facing a 'seafood trade deficit,' the industry wants to grow more fish in the ocean, but others say not so fast. Next time you order a shrimp cocktail, eat a bagel with smoked salmon or

enjoy a tuna sandwich, know this, the world's appetite for fish is growing a lot faster than the oceans can supply them. Global fish consumption has doubled in the last 40 years, outpacing population growth. In the U.S., seafood sales have grown by about 10 percent a year since 2001. Nutritionists tout the health benefits of eating fish. But most ocean fisheries are fully exploited or over fished.

What to do? The seafood industry wants to grow more fish on farms, which already cultivate shrimp, salmon, oysters, clams, catfish and other species, providing nearly half the world's fish. New legislation proposed by the Bush administration would make it easier to develop industrial-scale aquaculture in ocean waters. Today, U.S. aquaculture is concentrated in lakes, ponds and waters close by the shore. "If we expect people to eat seafood twice a week because it's good, we really need to get aquaculture going in this country." says John Connelly, president of the National Fisheries Institute, a Washington-based trade association. Others are in no such hurry. Some environmental groups oppose the proposed National Offshore Aquaculture Act of 2007 (NOAA), arguing that it doesn't go far enough to protect the oceans from pollution. Fish can escape from farms and damage the wild fish population, diseases from farmed fish can spill over into the natural fish population, fish waste can damage the ocean floor and the hunger of farmed fish for smaller fish or fish meal can itself lead to overfishing and disruption of the food chain.

Food and Water Watch, an anti-corporate activist group, declares: "The factory-farm model is being adopted for aquaculture: growing food as cheaply as possible using toxic chemicals and other harmful techniques, packaging it in enormous bulk, and shipping it to distant grocery stores and restaurants all around the world."

In Alaska, meanwhile, commercial fisherman and state politicians worry that the rapid growth of farmed fish threatens their state's most important industry. U.S. Senator Lisa Murkowski, an Alaska Republican, says: "If we simply take dollars away from the existing commercial fishing industry and move them over to the aquaculture industry, are we really creating new commerce?"

Even more blunt is Mark Vinsel, executive director of the United Fisherman of Alaska. "We oppose fin fish farms, anytime, any place, any species," he says.

Alaska salmon fisherman have already been hurt badly by the rapid growth of salmon farms in places like Chile and Norway. Globally, aquaculture is one of the fastest-growing businesses in all of farming, with revenues increasing by about 11 percent a year. Most of that growth has come from Asia, where China, India, Indonesia, Thailand and Vietnam all grow more fish than the U.S. As a result, the U.S. faces a "seafood trade deficit" of about $8 billion a year. The Bush administration bill would make it easier to farm fish in U.S. marine waters, which generally extend from three to 200 miles offshore. It would streamline the permit process, giving primary responsibility to the National Oceanic & Atmospheric Administration, a unit of the Department of Commerce.

Right now, the industry says, it's all but impossible to get a permit for a large-scale fish farm because a multitude of federal agencies are involved. "You have a process with nobody to lead it," complains Donald Kent, president of the nonprofit Hubbs Sea World Research Institute in San Diego. After trying for years to get permission to develop a fish farm off the California coast, Hubbs-SeaWorld gave up and built a demonstration project off the coast of Ensenada, Mexico. "We're becoming a nation of importers, when we could be developing our own industry that we can control," Kent says.

Similarly, Taylor Shellfish Farms, a family-owned firm which grows clams, oysters, mussels and geoducks - giant burrowing clams that weigh more than a pound - bought five fish farms in British Columbia last year. The firm, which has operated in Washington state since the late 1800s, did so in part because efforts to expand closer to home were stymied. "The regulatory climate presents some monumental challenges," says Bill Dewey, a Taylor executive.

Efforts to bring the industry and environmentalists together have made some headway. Last year, a task force of fish farmers, scientists and policy-makers convened by the Woods Hole

Oceanographic Institute produced a 128 page report on "Sustainable Marine Aquaculture" that recommends for promoting aquaculture while protecting the environment. Rebecca Goldburg, a senior scientist at Environmental Defense and task force member, says her group supports aquaculture so long as proper environmental standards are in place. In fact, Environmental Defense's Oceans Alive list of the best and worst seafood choices recommends farmed clams, oysters and mussels. But she opposes the administration's bill. "It gives way too much discretion to NOAA."

In the meantime, China has become the biggest exporter of farmed fish to the U.S. Let's just hope the Chinese grow fish more carefully than they make pet food.

Announcements & Upcoming events

Southern Aquaculture working group meeting

From Dr Lizeth Botes lbotes@ai-sa.org.za

The next SAWG meeting is scheduled for 20 Sept 2007.

If you'd like to add any agenda points for the SAWG meeting, please feel free to do so. I send a follow up email that will contain, the agenda, venue and working notes on the previous meeting.

Please confirm your attendance by email with Genevieve Brock at gbrock@ai-sa.org.za

Conferences

The Seventh International Conference on Recirculating Aquaculture

25 July 2008 Roanoke, Virginia, United States

The conference is designed for individuals in industry, government, or academia who are involved with recirculating aquaculture. This conference continues to feature presentations and poster sessions from leading experts in recirculating aquaculture.

Website: http://www.cpe.vt.edu/aquaculture/r-aqua/

Contact Ms. Terry Rakestraw

Phone (540) 231-6805 Email: aqua@vt.edu

AQUACULTURE ASSOCIATION OF SOUTHERN AFRICA

CONFERENCE REGISTRATION FORM

REGISTRATION & PAYMENTS TO BE SETTLED BY 30 SEPTEMBER

Complete & return with proof of payment to: **Fax: +27 (0) 12 807 4946** **Email: info@aasa-aqua.co.za**
Post: PO Box 71894, The Willows, 0041, South Africa

Surname:	Title:	First Name:
Postal Address:		
Affiliation/Institution/Organisation:		
Email:		
Tel. □	Fax:	Cell:

Event:	Date:	Please mark your choice clearly with a cross (X)					
Fresh Water Field Day and Tour	**22 Oct.**	AASA Members **R 300**	Non-Members **R 360**	*Please choose only one of the two field days and tours*			For admin. use
Marine Field Day and Tour	**22 Oct.**	AASA Members **R 300**	Non-Members **R 360**				For admin. use
Conference	**23 - 24 Oct.**	AASA Members **R 1020**	Non-Members **R 1440**	**Student**: Member-**R960**	**Student:** Non-Member- **R 1200**		For admin. use
Workshops A (morning session)	**25 Oct.**	AASA Members **R 240**	Non-Members **R 300**	o *Aquaculture Disease and Disease Management*			For admin. use
Workshops B (morning session)	**25 Oct.**	AASA Members **R 240**	Non-Members **R 300**	o *Policies, Sector Plans, Best Management Practises, Compliance and Biodiversity Issues*			For admin. use
Workshops C (afternoon session)	**25 Oct.**	AASA Members **R 240**	Non-Members **R 300**	o *Marine Finfish*			For admin. use
Conference Banquet	**24 Oct.**	AASA Members **R 192**	Non-Members **R 240**				For admin. use
New **Aquaculture Disease Training Program**	**26 Oct.**	AASA Members **R600**	Non-Members **R600**	*Please choose only one of the two training programs.*			For admin. use
HACCP for Managers	**26 Oct.**	AASA Members **R600**	Non-Members **R600**				For admin. use
Please include my 2007 AASA membership fee so that I am eligible for membership discount		Individual Membership **R 400**	Non-Affiliated Individual Membership **R 450**	Student Membership **R 250**	Corporate Membership **R 1500**	Institutional Membership **R 1500**	For admin. use

TOTAL	R	**Account Name:** **Aquaculture Association of Southern Africa (AASA)** **Bank:** **ABSA** **Account No: 4067483162** **Branch Code:** **333845**

Field Day and Tours	The field days and tours will consist of visits to aquaculture facilities and will include transport and a light lunch.
Conference	The conference will be held at the Cape Town International Convention Centre and will include refreshments, lunch, parking and stationery. Conference program to follow.
Workshops	Delegates may choose to attend one or two workshops - note however that sessions are run in parallel, meaning one morning (A or B) and one afternoon (C) workshop can be attended.
Banquet	The banquet will be formal and will include a conference prize giving and announcement of the aquaculturist of the year. Meal preferences will be determined and catered for. Only limited seating available, early booking essential.
AASA Membership	AASA membership allows for considerable discounts at the conference. If you include your membership fee, the AASA office will ensure that you receive the necessary membership application form and details. Please remember that corporate and institutional members may enter 5 employees at member's rates for the conference.
Payment	Please ensure that payment of all monies is paid into the AASA account and that proof of payment accompanies your registration form. For assistance with international payments, please contact the AASA office.
Late Registrations	Registrations after 1 July 2007 will be subject to a 20% increase in all conference fees. (i.e. Banquet, workshops and field days, etc.)
Papers and Posters	The first call for papers has been circulated. Delegates wishing to present papers and posters can contact the AASA office for further assistance.
Accommodation - *ref. Aquaculture*	Delegates are responsible for their own accommodation. You may contact Cape Town Tourism for assistance: Tel: +27 (0) 21 - 487 6800 Email: capetown@tourismcapetown.co.za Online: www.tourismcapetown.co.za/capetown
Transport - *ref. Aquaculture*	Delegates are responsible for their own transport. You may contact Cape Town Tourism for assistance: Tel: +27 (0) 21 - 487 6800 Email: capetown@tourismcapetown.co.za Online: www.tourismcapetown.co.za/capetown

Employment

Employment in Aquaculture sought

I completed masters degree in marine biology and oceanography at Annamalai University in India, and have five years shrimp farming experience and one year experience in a hatchery. I have been working in Madagascar for last two years. I am looking for a job in the aquaculture industry.

K. Saravanan sarvanmb@yahoo.com

Doctorate in Marine Biology and am interested in pursuing a career in South Africa. I have extensive experience in various sectors of the Marine Industry in India and Indonesia and am looking for opportunities available. CV available via email.

Dr Girish Menon drgirishgm@yahoo.com