



Based at INFOFISH, Kuala Lumpur, and set up with the assistance of FAO, the Advisory Service for Fishing Technology for the Asia/Pacific strives to facilitate dissemination of information on fishing technology and equipment for the industry and research/training institutions as well as to promote links between research institutions, administration and industry. Since 1992, INFOFISH has issued a quarterly newsletter collating global fisheries news and new items relating to fishing technology and fish harvesting.

Information on fishing technology and equipment also appears in *INFOFISH International*, a bi-monthly magazine of which the current issue will include an article on a "*By-catch reduction in Iranian trawl fishery through cod-end modifications*" by Steve Eayrs. A supplementary section on "Industry Notes" provides information on latest developments in the global fisheries scene. New equipment and innovations are also featured. Comments and contributions are welcome, so are requests/recommendations for inclusion in the mailing list.

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If you are in the tuna business - here is an event not to be missed!

**TUNA 2010 BANGKOK
11TH INFOFISH WORLD TUNA TRADE CONFERENCE & EXHIBITION**

20 -22 May, 20100

Centara Grand & Bangkok Convention Centre
at CentralWorld, Bangkok, Thailand

The world's largest tuna industry gathering where industry leaders and stakeholders from all over the world meet.

The series of world tuna trade conferences, organized by **INFOFISH**, has always been the best forum of the latest trends and developments, exchange views and make business deals with partners from all over the world.

TUNA 2010 will take a close look at the current issues and challenges facing the global tuna industry. The conference will be addressed by nearly 40 renowned speakers.

Please contact us for further details.

Editor's Note

All these years, the Fishing Technology Digest has come to you on a complimentary basis. Rising production costs have, however, compelled us to switch to a new format and adopt alternative printing arrangements. We hope you will understand our predicament and bear with us. Despite the constraints, there will be no sacrifice on quality and content. Needless to say, in the present scenario we would welcome any assistance from companies or organisations through full or partial sponsorship of the Digest to ensure its uninterrupted production.

1 *New study finds catch shares improve consistency, not health, of fisheries*

Catch share programmes result in more consistent and predictable fisheries but do not necessarily improve ecological conditions, according to a new study published online this week by the journal *Proceedings of the National Academy of Sciences*.

Employed by nations around the world, catch shares - a management system that divides up and allocates percentages, or shares, of the total allowable catch to individual fishermen or fishing groups - have generated controversy as to whether they lead to better environmental stewardship than other fishery management options. The study, funded by the Lenfest Ocean Programme, concludes that these programmes help to eliminate erratic swings in fishing rates, catch landings and fish population sizes, among other factors, but may not necessarily lead to larger fish populations. This research is the most in-depth and comprehensive study of the ecological impacts of catch share programmes in North America.

Publication of this research coincides with the public-comment period for the US National Oceanic and Atmospheric Administration's (NOAA) draft catch share policy, which evaluates catch share programmes under the Magnuson-Stevens Act, the nation's primary fisheries law. NOAA's draft policy "encourages the consideration and adoption of catch shares wherever appropriate in fishery management and ecosystem plans and amendments and will support the design, implementation and monitoring of catch share programmes."

"Many proponents of catch share programmes presume that they improve the health of fisheries, but our research indicates a much different expectation: They work very well to avoid erratic swings. They generally do not lead to more fish to catch," said author Dr Tim Essington of the School of Aquatic and Fishery Sciences at the University of Washington in Seattle, Washington. "Catch shares are one potential method for improving fisheries management, but we shouldn't expect these programmes to be a panacea."

Participants in a catch share programme may fish for their shares of the fishery at their discretion until their quotas are filled. This management method is often contrasted with a "race-for-fish" management option, where fishermen compete with others in the fishery during a set time frame.

The increase in predictability found to accompany catch share programmes may result from greater incentives for fishermen to comply with rules and regulations. The study's findings also suggest that catch share fisheries may have lower rates of discarded fish.

Essington studied 15 catch share programmes in the United States and Canada and looked at a range of measurements for each fishery, including population status, catch landings and fishing rate. He compared fisheries with catch shares to fisheries without them and also evaluated fisheries before and after the implementation of a catch share programme. The research analyzed both the average value and the year-to-year variability of the measurements.

Essington cite a need to assess a larger number of fisheries globally. "We have sufficient data to quantitatively evaluate many pros and cons of catch share programmes. It could also help identify fishery and program-design characteristics that make these programmes more effective in achieving better ecological outcomes."

A summary of the study and an audio file of a press briefing with the author are available at www.lenfestocean.org

2 *Great white sharks in Australia tracked by tags and text message*

More than 70 white sharks have been tagged by scientists in Western Australia in a world first trial that will send beach lifesavers a text message when one of the predators swims close to the Perth shoreline.

Wildlife officials and scientists will also receive the text or email warning when any of the tagged sharks move to within 500m of metropolitan beaches.

The text messages will be triggered less than two minutes after a shark swims over any one of 18 acoustic seabed receivers. Since the receivers were installed in May, Department of Fisheries's senior research scientist Dr. Rory McAuley said sharks had been picked up in Perth waters on four occasions, PerthNow reports. The last detection was in September.

"The use of the technology that delivers real-time notifications of tag detections hasn't been used in an operational sense anywhere else in the world," Dr McAuley told the website.

The study is aimed at unlocking the secrets of sharks migration patterns and how they relate to attacks on humans.

"The information we are hoping to collect will hopefully provide us some answer to the questions we are always asking about how long white sharks spend off our beaches, whether they come back, is there a season, do they come back one year after the other."

In all, researchers hope to tag 100 sharks over the next two years. The sharks fitted with the satellite-tracking darts by researchers who shoots or stab the devices into the flank of the animals.

"I think the public's fear of sharks stems largely from a fear of the unknown," Dr. McAuley said. "Any information we can find out about the real risk of people encountering sharks at the beach will hopefully alleviate people's concerns to some degree."

Sharks are an ever-present threat in the waters off Perth. Nine years ago, a man was killed by a white pointer in waist-deep water off Cottesloe Beach. Since then, there have been a dozen shark attacks in Western Australia, two of them fatal.

ICSF 31 December, 2009

3 *Virus fears for wild abalone fishery*

The world's largest wild abalone fishery is under threat from a deadly virus and falling prices. This fishery, worth A\$200 million (US\$180

million) a year, off Australia's Tasmanian southeast coast exports almost all of its products.

Now, operators are anxiously awaiting test results for abalone viral ganglioneuritis (AVG), a deadly virus which since 2007 has spread slowly through waters off the Victorian and Tasmanian coast.

Since then urgent tests for the virus in wild populations have been carried out both in Victoria and Tasmania. Western Australia has also initiated testing, but says its stocks are AVG free.

AVG can produce very high mortality rates, but does not affect humans. However, there is concern that the disease could spread into Tasmania's wild fisheries.

Dr. Rod Andrewartha, Tasmania's chief veterinary officer, says: "Our current activities are aimed at trying to determine the location and extent of any disease in the wild so we can develop appropriate control measures.

"So far we have only limited evidence of disease in a few abalone and, despite intensive monitoring over the past two years, we have seen few signs of the disease in the wild."

Tasmania's wild abalone fishery harvests 2490 tonnes worth A\$95 million (US\$86 million), or A\$35 (US\$32)kg in 2007-08, providing about 50% of Australia's commercial harvest and 25% of the world's annual commercial harvest. Of Australia's production of 5320 tonnes, 90% is wild caught by divers.

Other Australian states, such as New South Wales and Western Australia, have introduced bans on the transport of live abalone to limit the spread of the disease. Falling prices as a result of lower demand in HongKong and Japan, and the strong Australian dollar, are seriously squeezing the fishery.

Intrafish, November 2009

4 Three-year ban on sea cucumber harvest

The National Fisheries authority (NFA) of Papua New Guinea has imposed a three-year ban on the gathering of bech-de-mer or sea cucumber. According to NFA, the sea cucumber has been over-fished and its stock could face exhaustion if nothing is done. The ban is likely to impact more than 300,000 fishermen who are engaged in the fishery.

INFOFISH International, 6/2009

5 Fishermen and vessel safety gains attention of governments

In a major overhaul of the fisheries safety laws, Congress may impose new construction standards for fishing vessels, mandate coastguard inspections and require training of skippers to improve safety at sea. The 1988 Fishing Vessel Safety Act included requirements for emergency locator beacons, survival suits for cold water fishing and coastguard-approved life rafts. The law substantially improved the survival rates of fishermen, especially in Alaska's fishing grounds where the average annual death rate had dropped by

more than 40%, according to the National Institute of Occupational Safety and health (NIOSH).

The fishing industry is still considered to have the highest worker-fatality rate and, in recent years, fishermen died at a rate of more than 25 times the national average for occupational deaths. The key elements of the new law include coastguard safety inspections every two years, safety training for skippers, and new fishing boats of length 50 feet operating three miles offshore to have extensive construction and equipment standard.

Meanwhile, in Malaysia, the Minister for Agriculture and Agro-based Industry Ministry said that it may make it compulsory for future deep-sea fishermen to undergo courses under the Fisheries General Safety Scheme. The scheme would expose the fishermen to comprehensive safety aspects including first aid and survival at sea.

INFOFISH International 1/2010

6 Marine reserves as a tool for managing fisheries

The key concept behind marine reserves revolves around the idea that offspring produced in a protected area can replenish the stocks of harvested species outside the reserve. The marine protected areas can range from no-take reserves to various levels of limited harvesting, and sometimes involve restriction on who can harvest fish in an area rather than how much can be taken. Local fishermen in the area of Puerto Penasco, Mexico set up a network of marine reserves as part of a community-based effort to manage their resources. Ecological and social studies conducted before, during, and after the establishment of those reserves enable the researchers to track the results.

According to Professors Raimondi and Mark Carr of UCSC, monitoring studies around the globe systematically show positive response within protected areas. For example, fish species targeted by fishermen tend to be bigger and more plentiful within the reserves. Fish population in the reserves with larger females will result in major effects on larval production and help in maintaining healthy populations of species such as West Coast rockfish. This is in addition to the spillover effects when fish swim out of the reserve and get caught.

The local fishermen in Puerto Penasco saw the beneficial effects of shell fish growing and reproducing quickly within a year after they had established a network of reserves. The success of the cooperative was recognised by the Presidential Conservation Award of the government of Mexico. However, the system had a set back when other fishermen from outside the community began to poach from the reserves. However, the situation began to improve when the Mexican government created exclusive fishing zones in the Gulf of California, giving the local fishermen cooperative the exclusive legal right to harvest shellfish in the Puerto Penasco area. This could be seen as a part of the trend around the world of local people demanding control over their resources and the evolution of the community based resource management system. The PANGAS project, which brings together experts from UCSC, the University of Arizona, and several collaborating academic institutions and nonprofit organisations in Mexico, is working with other fishing communities in the Gulf of California to develop management plans for the region's marine resources.

7 At Copenhagen global warming conference, alarms on ocean acidification

Walk the halls at the cavernous Bella Conference center in Copenhagen, Denmark, and it's no surprise that global warming gets all the buzz, all the time. Carbon dioxide's other effect, to increase the acidity of sea water, is a bit like the toddler constantly tugging at the trouser legs of its elders, asking: "What about me?"

On Monday, the UN Convention on Biological Diversity attempted to strengthen that tug by releasing a "synthesis report" on ocean acidification. The oceans' acidity has increased 30 percent over the last 250 years. But at current carbon-dioxide emission rates from factories, power plants, and other human activities, ocean acidity could increase by 150 percent by 2050, according to the survey of recent research on the subject.

If that occurs, it would represent an increase some 100 times faster than ocean life has experienced in the last 20 million years – a rate that outpaces the ability of shell-building marine life to adapt to the shift through evolution. As the oceans become more acidic, they eat into stores of carbonate minerals dissolved in seawater. Many ocean animals use various forms of these carbonates to build shells, or in the case of corals, to generate the skeletons they live in and that form coral reefs.

Humans rely on many of these animals indirectly, since they serve as food for large fish. And they rely on some of them directly as food – lobsters, clams, oysters, conch, and a range of other high-value creatures. In the case of corals, reefs provide a dual benefit as nurseries for fish, and as a first barrier against coastal erosion from high waves and storm surges.

The bottom line: Even if carbon dioxide had no effect on climate, burning fossil fuels – a process that releases CO₂ sequestered deep underground for millions of years – would still alter the oceans and the marine life it supports.

ICSF 22 December 2009

8 Call for banning gill nets to restore prosperity to Belizean fisheries

During earlier years Belize's fisheries was one of Belize's finest assets. It processed many species of sea life that bolstered Belize's economy through export and provided lucrative employment for thousands of Belizean fishermen and others employed in the industry.

As a result of political influence and gross mismanagement, foreign fishermen have been allowed to fish in Belize's waters with their gill nets. Their activities and the activities of foreign trawlers have depleted Belize's fisheries and damaged Belize's fishing grounds. The depletion and damage is so grievous that Belize's fisheries is no longer the bright star that provided so much to maintain the economy.

Ninety percent (90%) of all gill net fishermen who work in Belize's waters are foreign Guatemalan fishermen who salt their catch and ship it back to Guatemala.

Gill nets are referred to as the wall of death, and for good reason. They do not discriminate, any form of life that becomes entangled in them dies. It may be a fish, sea turtle, dolphin or manatee. The Manatee is considered a delicacy in Guatemala.

The Government has enacted a catch-and-release law to protect Tarpon, Permit and Bonefish. It is an excellent law. However, the wall of death pays no attention to this law. It traps and kills Tarpon, Permit and Bonefish in great numbers. The Government protects the fish from Belizeans and sport fishermen, but not from Guatemalan gill netters.

The gill netters catch the Tarpon, Permit and Bonefish, salt them, then ship them off to Guatemala. Gill nets that Guatemalan fishermen weight down to the bottom to harvest lobsters, destroy the habitat and the corals they come in contact with.

During a meeting attended by southern fishermen they took the position that gill-net fishing was bad for the country. They contended that the only reason they fished with gill nets was because the Government allowed the Guatemalans to do so.

They further stated that if the Government would stop the Guatemalans from fishing with gill nets in Belize that they would gladly give up gill-net fishing.

Belizean gill net fishermen have now, approximately 6 years later, repeated their statement, this time on television. Belizean gill net fishermen have waited for years, hoping for the banning of gill nets at sea.

When Belize fishermen were polled regarding their views in respect to gill-net fishing, the responses were near unanimous that gill-net fishing should be abolished. The polls clearly showed that it would be in the best interest of Belize to abolish gill net fishing. When the Minister of Fisheries, the Hon. Servulo Baeza, indicated that he was prepared to outlaw gill-net fishing, Prime Minister, Said Musa, promptly removed him as Minister of Agriculture and Fisheries.

The damage to Belizean fisheries is not confined to gill net fishing. The trawlers from Honduras are major players. After they depleted Honduras' fishing waters, they moved to Nicaragua. When the Sandistas took over in Nicaragua, they expelled the trawlers from their waters and Belize, foolishly, allowed them to come and ruin our waters.

Irrespective of the damage they have done to the fisheries, and the fishing grounds, politics have allowed the trawlers to stay despite the mounting evidence against them.

Dr. Gary Mefe of the University of Florida, claims that trawling "is one of the most damaging kinds of habitat destruction on earth". He is right! The heavy chain that anchors the bottom of the throat of the net plows deep into the sediment on the seabed as it is dragged, extended cross-wise, behind the trawler.

The chain acts like a plough, scarring the sea floor, kicking up clouds of sediment and destroying the habitat that is the nursery grounds for Belize's developing fish.

Crew members have reported that the by-catch from the trawlers is so

high that for every 100 pounds of shrimp caught, they throw away 1500 pounds of by-catch fish and other sea life. Sea creatures dumped from the trawlers are either dead or dying.

Trawling also does great damage to the environment. The chain that ploughs through the soft sea bed causes tons of sediment to rise to the surface, spread out, then sink back toward the bottom, killing the coral underneath.

The latest development is that the Jamaicans are here with their boats and fishing gear, ready to start fishing. However, they made a mistake. They arrived before a permit allowing them to fish was issued.

The secret was thus exposed and the people have had an opportunity to object. The people have demonstrated, vociferously objecting to all foreign fishermen, Guatemalans, Hondurans, Mexicans and Jamaicans. The people have spoken. They want all foreign fishermen out!. They have had enough of exploitation and destruction of their fisheries. They want no more!

ICSF 21 December 2009

9 IUU regulation: Chaos and paper tsunami feared

The European Council regulation targetting illegal, unreported and unregulated (IUU) fishing, taking effect from 1 January 2010 is feared to create a regulatory burden on the exporters. A catch certificate for the raw material sourced will be required for exporting to EU from 1 January 2010.

The EU is Vietnam's biggest market. Exports to EU account for 30 percent of the total export value. Vietnam exported to 27 countries in the EU during 2009. The regulation has complicated work for export business in Vietnam where the fisheries industry is not highly modernised. Vietnam has around 130,000 vessels of which only 16 percent have power greater than 90hp. The rest are small boats working beyond local authority control. The IUU regulation requires all businesses to show their fishing permits and origin of product, including the vessel name and fishing field.

The fishermen will be required to keep a report on each individual fishing trip. According to Phan Van Hai, a fishermen in Quyn Lap Commune, Quyn Luu Districts in Nghe An, previously a product report for 190hp vessels was given to the Fisheries Products Research Institute once, at the end of the year. Fishermen fear that keeping track of each individual trip is very cumbersome and time-consuming and will slow down the business. Moreover, many workers on boats lack elementary schooling so completing the records would prove difficult. The most difficult part of doing a report is categorising the products as dozens of fish species are caught during each trip.

On the importers' side, each importer is required to print the catch certificate of each consignment, put the date, signature and stamp and scan these documents for sending to the competent authority in the importing country. The competent authority in turn has to print the catch certificates to sign and stamp them for approval. However, the operators of the seafood trade are broadly supportive of the regulation, despite the short term difficulties due to the long term benefits, especially if Japan the United States were to follow Europe's lead and bring in

similar legislation.

INFOFISH International 1/2010

10 Anchovy fisheries heading for sustainability

The Peruvian government has established the first Peruvian Observatory to regulate its fishing industry. The observatory would be operated by universities Cayetano Heredia and del Pacifico, The Nature Conservancy (TNC), WWF and the Instituto del Mar Peruano (IMARPE).

This observatory aims to implement a monitoring system that will strengthen and complement the technical capabilities of the government to ensure sustainable management of anchovy stocks.

The observatory would provide free access to fisheries data for the scientific community and the general public and would facilitate the implementation and enforcement of the "maximum established catch per boat" set previously by the government.

Furthermore, it will help to assess the potential impacts of industrial fisheries and recommend best practices to strengthen the sector and improve fisheries management, ensuring the resilience of the anchovy population and the sustainability of the marine ecosystem of Peru.

Peruvian anchovy (*Engraulis ringens*) fisheries contribute 10 percent of the total fish catch in the world. Anchovies are a major Peruvian export, reaching more than US\$ 1.7 billion in 2008, equivalent to 70 percent of national fish exports for the entire country.

As a part of project, an online platform will be designed for providing accurate technical information on the implementation of quotas, seasons and other aspects relevant for eventual certification of Peruvian anchovy fishery by the Marine Stewardship Council (MSC).

INFOFISH International 1/2010

11 Multi-hazard early warning system

The Asian tsunami struck Indian Ocean countries on 26 December 2004 when a 9.14 magnitude earthquake struck off the coast of Indonesia killing almost 230,000 people. Under the coordination unit of the United Nations' Intergovernmental Oceanographic Commission (IOC), an Indian Ocean tsunami warning system, comprising a vast network of seismic centres, deep-ocean and sea-level buoys has been installed along with coastal gauges, watch towers and other instruments in 2009.

The time scales of natural disasters are different. With tsunamis, the time to react is short while cyclones and storm surges may give two to three days. But the solution is the same when it comes to awareness and preparedness. The infrequency of tsunamis, coupled with the costliness of high-tech early warning systems may lead to the loss of interest in governments' to keep the investments for maintaining the system.

INFOFISH International 1/2010

RESEARCH

12 Technology to stop fraud in seafood labelling

A complicated process is required to identify tuna species in traded forms, which may be dressed, gilled and gutted, or fresh or frozen loin and belly meat. A new ground breaking study offers a genetic method for the precise identification of all eight species of tuna. It allows for the accurate differentiation of tuna species from any kind of processed tissue or type or presentation, including sushi and sashimi using genetic sequencing for the first time. The study examines the tuna species of the genus *Thunnus*, such as the bluefin tuna, as well as tuna belonging to the closely related subgenus *Neothunnus*. The unlinked genetic markers, one a segment of the mitochondrial genome and the other a nuclear gene, allows one to distinguish between all eight tuna species.

A new hand-held tool involving DNA barcoding was used by the Sackler Institute for Comparative Genomics in Washington to identify endangered bluefin tuna served in sushi bars. The hand-held tool assigned a barcode to various species of tuna in a similar way that barcodes identify products in stores. The device has also been used to identify the presence of endangered whales in Asian markets and fraud in labelling of caviar and red snapper. It may not be long before wildlife management teams could seamlessly and efficiently identify a species and maybe the geographic origin of specific samples.

INFOFISH International 1/2010

13 DNA barcoding for protecting whale shark

In a court case involving illegal fishing of whale shark, (*Rhichodon typus*), in India, DNA barcoding was used for forensic identification of the meat of the endangered fish.

The whale shark is the largest shark in the ocean, reaching a length of 20 metres and a weight of 20 mt. They are highly migratory and have a broad distribution in tropical and warm temperate seas, usually between latitudes 30°N and 35°S in both deep and shallow coastal waters and lagoons of coral atolls and reefs.

The species was listed in the Convention on International Trade in Endangered Species (CITES) in April 2000 and is a protected species in India.

However, illegal fishing using hook and lines and trawlers with necessary modifications for 'at-sea-processing' is practised in India. In one such incident suspected flesh of whale shark was seized from fishermen by the authorities in Kerala state and a case was filled in the Court.

Based on DNA sequencing by the Cochin unit of the National Bureau of Fish Genetic Resources, the seized meat sample was confirmed to be that of whale shark. This is the first case in India in which scientific evidence through DNA markers was used to identify the meat of a protected aquatic organism.

INFOFISH International 1/2010

EQUIPMENT & SUPPLIES

14 Maritime communication system

The challenges faced by fishing companies include the requirement for reliable, global coverage from a single provider which allows it to access real-time data and comply with regulatory requirements. Inmarsat's I-4 satellite network delivers FleetBroadband (FBB) as the first maritime communications service to provide consistent broadband data and voice connectivity simultaneously through a compact antenna on a global basis.

Regardless of the vessel's size or pursuits, users of FleetBroadband are currently benefiting from real time weather, charts, internet access, VPN, remote camera monitoring, ordering supplies and maintaining crew morale by enabling telephone and email access.

The other applications include SMS and instant messaging, virtual meeting using video-conferencing, ordering supplies before the vessels arrives at port and advance bookings for repairs and maintenance. (Inmarsat, USA)

15 Anti-slip products

In order to make floor safe, it is important to apply the appropriate anti-slip product on the correct surface, with the proper surface preparation and then to maintain the surface appropriately. When contaminants combine with a naturally smooth, non-porous surface such as steel, concrete and tile, slips and falls are the result.

No Skidding® manufacture and distribute slip-resistant products that

increase the co-efficient of friction on all types of floors including natural stone, wood, painted, concrete, vinyl, metal, etc., indoors and outdoors.

No Skidding® products can be used virtually anywhere slipping may be a problem. The products include the most comprehensive range of anti-slip coatings, slip-resistant safety tapes, anti-slip treatments and slip-resistant floor care products.

(No Skidding Products Inc., Canada)

16 Hand-held sonar system

The trouble with most depth sounders is that they can only see what is in a fairly narrow cone, directly under the boat. However, the ultra-light hand-held H22PX lets one aim its beam wherever one wants to see, like an underwater flashlight.

One press of the button gives real-time depth and fish readings, while another press will indicate the current water or air temperature.

Algorithmic programming virtually eliminates false readings while Shoot-Thru Technology allows readings through ice and solid fibreglass or aluminium boat, kayak or canoe hulls.

The impact-resistant housing includes a wrist strap and the unit floats if dropped overboard. Since it is submersible to 200 feet, it could be used as a range finder while diving.

(HawKEye Electronics, USA)

17 SEAFDEC promotes the use of circle hook in Malaysia

SEAFDEC organised the Fishing Trial and Demonstration to Promote the Use of Circle Hook in Bottom Longline Fishing from 29 September to 1 October 2009, in collaboration with Sarawak State Department of Fisheries, Malaysia. This event was aimed to encourage the longline fishers to use circle hook in their longline fishing operations in order to reduce sea turtle mortality and by-catch in the bottom longline fishing.

The event was participated by local fishers, staff of Museum Department (the agency responsible for the management and conservation of the sea turtles in Sarawak State), staff of Department of Forestry as well as staff from DOF-Malaysia HQ and SEAFDEC-MFRDMD.

The event included lecture and discussion, one-day fishing trial to compare the efficiency of circle hook compared with conventional J-hook, and discussion on reduction of sea turtle by-catch in the bottom longline fishing.

Samples of the circle hooks and d-hook (a device used for removing the hook from sea turtle's mouth) were distributed to local fishers and extension officers for further trials and promotion as discussed during the activity.

18 On site training on environmental/user friendly fish handling and preservation technique

SEAFDEC in collaboration with the Department of Fisheries and Resources Protection (DECAFIREP) of Vietnam, with financial support from the Japanese Trust Fund, organised an On-Site Training on Environmental/User-Friendly Fish Handling and Preservation Techniques from 4 to 6 August 2009 at Phu Yen Province, Vietnam. The Training was attended by tuna longline fishers, harbor authorities, factories, local officers of Phu Yen fisheries office, and DECAFIREP'S STAFF.

The major objectives of the Training were:

- i) to provide technical support on reduction of post-harvest losses and improvement of fish handling onboard tuna fishing boats,
- ii) to transfer appropriate technology to the longline fishers on environmental/user-friendly fish handling and preservation techniques, and
- iii) to exchange knowledge and discuss with the fishers and other key stakeholders on ways to improve quality of landing catch. This training was therefore expected to help in improving the quality of catch while reducing the post-harvest losses from longline operations. In addition, the training also came up with recommendations for improvement of the catch quality of tuna in Phu yen, i.e. the modification of onboard fish handling to maintain the low-and-steady-temperature for tuna before unloading.

PUBLICATIONS

19 Freshwater Prawns Biology and Farming

Edited by Michael Bernard New, Wagner Controni Valenti, James H Tidwell, Louis R D'Abramo and Methil Narayanan Kutty

This 560-pages publication is a compendium of information on every aspect of the farming of freshwater prawns, an industry with a current annual global farm-gate value of close to US\$ 2 billion.

The book builds on New and Valenti's earlier (2000) book, *Freshwater Prawn Culture*, incorporating the most up to date information available. It is comprehensive review of the status of research, development and commercial practice, intended to stimulate further advances in knowledge and understanding of this important field.

An internationally renowned team of 44 contributing authors has written 24 chapters covering all major aspects of the subject, including biology and taxonomy; hatchery and grow-out culture systems; nutrition, feeds and feeding; genetics; size management; commercial developments around the world; post-harvest handling and processing; marketing; economics and business management; and sustainability.

The comprehensive information presented in the book will be of immense use to those involved in the culture and trade of freshwater prawns, prawn farm personnel, business managers and researchers.

The book is priced at US\$ 254.99/GBP 149.99/Euro 195.00 excluding

postage cost.

Further inquiries may be directed to Wiley-Blackwell, John Wiley & Sons Ltd, European Distribution Centre, Unit 1, 1 Oldland Way, Bognor Regis, West Sussex, PO22 9SA, UK
PH: +44(0)1243-843294

20 A Handbook for Sustainable Aquaculture

The SustainAqua consortium, a group comprising research institutions, industry associations, and SMEs from 15 European countries, was co-funded by the European Union in a three-year project that aimed to make the European freshwater aquaculture industry more sustainable and competitive. Among the outputs of the project, which came to an end in September last year, is the *Handbook for Sustainable Aquaculture*. The core of the book is a description of the five case studies that were carried out in five countries using different species of fish. These research modules, among the goals, sought to optimise production methods, by using utilising feed nutrients more efficiently, improving waste water treatment and reducing energy costs, while at the same time conforming to all legal requirements and producing fish of the highest quality. The practical applicability of the results is also addressed in a chapter that presents hands-on information for implementing the modules. The handbook is freely downloadable in several languages from the SustainAqua website: www.sustainaqua.org. Hard copies in English are available from : www.eurofish.dk for Euro 45.

21 Australia: A push to establish large marine sanctuaries

A new report has found that there would be significant economic benefits associated with the creation of large marine sanctuaries in Western Australia's south.

The lobby group Save Our Marine Life commissioned the report, which looks at the benefits of establishing sanctuaries in the region stretching from Geraldton in WA to Kangaroo Island in South Australia.

It found the eco-tourism industry, including businesses like whale watching, could expect a 20 percent increase in profits. Tim Nicol from Save Our Marine Life says the report also found that there would be long-term economic benefits for recreational and charter fishing.

"A network of marine sanctuaries would result in healthier fish stocks, which has a pillover benefit for fisheries, so whilst there'd be an initial cost for fisheries there will be longer term benefits," he said.

Mr Nico says commercial fishers could expect a 5 per cent increase in catch due to larger fish stocks.

"The study shows that there could well be a cost upfront for the industries like the rock lobster industry. The cost may not be as big as previously expected and the long-term industries across the Australian economy would benefit from a network of marine sanctuaries," he said.

A group representing the rock lobster fishing industry says it is in favour of small marine sanctuaries in the south west.

But Dexter Davies from the Western Rock Lobster Council says larger sanctuaries, like those in the report, could devastate the industry.

"Certainly, if there's large marine parks established over big fishing grounds, especially in the current climate when it's at very difficult times, it's got the capacity to have a huge effect and we certainly won't be in favour of that," he said.

ICSF 5 March, 2010

22 Chile: Chilean village swallowed by tsunami

The Chilean seaside resort of Pelluhue was transformed into a sandy wasteland without warning - one giant wave, then another, then scores of homes disappeared.

The further Chilean emergency services go after the huge earthquake that sparked a twin tsunami, the more grim discoveries they make.

"This part was full of houses. There were more than 100," said Silvia Aparicio, a community leader, pointing to the pelluhue beachfront.

"And that's nothing compared to what happened in the Marisquero," she added of a nearby district named after the shell fisherman who once lived here. Many tourists were asleep in their beds when the deafening roar came from nowhere.

"There was no warning. The waves surged in 40 minutes after the earthquake which took place at 03:25," said Aparicio, who lives at the

top of the town.

Three day after the quake, Pelluhue, some 300km from Santiago, remains a scene of desolation and sorrow.

Fallen tree trunks barring a road testify to the fury of tsunami that firefighters say swept away several hundred houses in all along the coast.

So far, rescue workers have counted 57 dead in Pelluhue and another 28 in nearby Curanipe, both close to the epicentre of the quake said to have killed more than 720 people in all.

Another 46 bodies have been found in the region and an unknown number are missing, said senior firefighter Wagner Alvear Flores.

Most are Chilean tourists who flocked to this village of farmers and fishermen to spend their summer holidays.

Many slept when the tsunami barreled in. Nearby, four men loaded up a truck with some chairs, a push-chair, a bed frame, a few pieces of furniture left from their vacation home, one of the few ocean-front houses to survive.

"We're returning to Curico (roughly 150km away). We cannot remain here," said Oscar Henriquez.

A police car drove past behind him, blasting a warning to residents by loudspeaker: "Curfew at 21:00!"

"Soldiers came here to maintain order since there have been a lot of robberies," Aparicio said. The first aid shipment also arrived, but the town remains without water and electricity. The supermarket is closed because there is nothing left to sell.

All face a long night ahead. "I'm very scared," Aparicio said, "because the aftershocks are stronger during the night."

ICSF, 5 March, 2010

23 India: 1,000 mechanised fishing vessel may be phased out in Kerala

An expert committee has found that the coastal waters in the south Indian State of Kerala are crowded with fishing fleet and hence, a substantial number of vessels need to be phased out.

The expert committee on registration of fishing boats and boat building yards, set up by the State Government in April last year, says that at least a fourth of the mechanised vessels operating in the State's waters are not needed to catch the currently available fish.

Since there are as estimated 3,800 mechanised boats, this will mean that roughly 1,000 boats will have to be phased out. They are an estimated 17,000 'valloms' (mechanised country craft) operating in the coastal waters.

The committee, headed by B. Madhusoodana Kurup, director of the

Cochin University of Science and Technology's School of Industrial Fisheries, has scaled up the estimate of maximum harvestable fish off the coast at 9.68-lakh mt a year. This is up from 7-lakh tonnes estimated over a quarter century. The up-scaling is based on the average peak harvests over the past 10 years. The maximum sustainable harvest, which is 10 per cent less than the maximum harvestable resource, will be less than 9 lakh mt. To catch this, the current fishing fleet is clearly superfluous, the committee says.

Nearly two-thirds of the harvestable fish off the coast are oil sardine, followed by mackerel, prawn and perch fishes. About 80 per cent of sardines caught in the country come from the State's waters.

The experts found that many commercially important fish had hit a 'no growth' stage. Major demersal fish, such as prawns and chephalopods, shown a declining trend in the recent years. There was a drastic fall in the availability of elasmobranches, catfish and goatfish.

The committee, which included fisheries scientists and senior officials of the Department of Fisheries, presented its report to Fisheries Minister S.Sarma. The committee was tasked with estimating the category-wise optimum fishing fleet required for exploitation of maximum harvestable quantity of marine fisheries resources of Kerala and examining whether registration can be granted to new fishing craft for marine fishing without adversely affecting the sustainability of resources.

The committee, in an important recommendation, called for getting all the fishing-boat building yards in the State registered with the Department of Fisheries. The registration should be on the condition that prior approval will be sought for the construction of mechanised and motorised boats and only certain types of boats will be built at a particular yard.

It has also called for a uniform and integrated all-India registration regime for all fishing vessels, in line with the registration of motor vehicles. The current practice of multiple registrations needs to be dropped. Registration is also necessary to check terrorist threats from the sea.

Another recommendation of the expert committee is for an overhaul of the Kerala Marine Fishing Regulation Act 1980.

The Act was found to be out of tune with the drastic changes in technology and types of gear used for fishing. An effective mechanism needs to be put in place to implement the Act's provisions.

ICSF, 24 December 2009

24 Indonesia: Fishermen running out of sea cucumbers

Indonesian fishermen at Scott Reef, one of the allowed areas for traditional fishermen in the Australian fishing zone, are running out of sea cucumbers.

"As the result of the increasing depletion of the resource (of sea cucumbers), the selling price has increased between 33 and 200 per cent within four years," James J Fox of the Australian National University said at a meeting of the Research Institute of Maritime and Fisheries.

According to Fox, the fishermen, mostly from Rote Island, East Nusa Tenggara, hoped that the price rises would compensate for decreased quantities of sea cucumber harvested. A total of 550 legal Indonesian traditional fishermen come to Australia every year.
ICSF 17 March, 2010

25 Malaysia/Indonesia: To cooperate in fisheries

The Malaysian Agriculture and Agro-based Industry Minister Noh Omar has announced closer cooperation between Malaysian and Indonesia in the marine and fisheries industries, particularly in the seaweed production and ornamental fish sectors. Earlier this year, the Minister led a delegation of senior government officers and heads of government-linked companies (GLCs) to Indonesia to discuss potential cooperation and investment in fisheries in agriculture.

The increased cooperation in fisheries is in line with the ASEAN-China Trade Agreement (FTA) and the ASEAN-Japan Comprehensive Economic Partnership (AJCEP) Agreement. As members of the D-8 group of Islamic developing countries, Malaysia and Indonesia had agreed on the marine and fisheries industries as the basis for enhancing food security. The volume of Indonesian exports to Malaysia in the fisheries sector in 2008 was 57,159 mt valued at US\$62.7 million.

INFOFISH International 2/2010

26 Denmark: Innovative fishing methods to reduce fuel cost

The Dutch beam trawl sector has embarked on an overhaul of its fishing gear to halve fuel costs by adopting innovative fishing methods to replace the traditional and often criticised beam trawl gear. Fuel cost now accounts for 30-50 percent of the beam trawl costs.

The innovative fishing methods, such as 'pulse-trawling' and variations of the aerodynamic beam trawl concept like Sum Wing, Hydrorig and Ecocatcher gear, are being tried to reduce fuel cost by 50%. The pulse-trawling gear emits a short electrical burst that draws bottom-dwellers from the sea bed instead of scraping it clean as with traditional beam trawlers. The gear was first installed in the TX 68 boat and has been shown to reduce the catch of undersized sole and benthic invertebrates, as well as fuel costs.

The skippers of the vessels are now looking to fit a combination of the aerodynamic beam and pulse trawl to maximise energy savings. According to the skippers, pulse fishing can create both fuel and carbon emission savings of around 50 percent. Discards are also reduced by 50 percent, and the disturbance of the seabed declines 30 percent.

Installation of the pulse trawl equipment, including winches and software, currently costs around US\$ 500,000; considerably more than the traditional beam trawls cost around US\$150,000. However, the industry was confident that the cost of the pulse technology would be reduced to around US\$449,000 if more vessels place orders. The gear could pay for itself very quickly, within two years according to industry sources.

INFOFISH International 2/2010

Calendar

March

Aquaculture America 2010

1-5 March, San Diego, California, USA.
Information: Conference Manager, PO Box 2302, Valley Center, CA 92082 USA
Tel: 1-760-7515005
Fax: 1-760-7515003
Email: worldaqua@aol.com
Website: www.was.org

Victam Asia 2010

3-5 March, Bangkok, Thailand
Information: Victam International
PO Box 197, 3860 AD Nijkerk, The Netherlands.
Tel: +31-33-2464404
Website: +31-33-2464706
E-mail: nienkevanketel@victam.com
Website: www.victam.com

2nd Aquariya Expo 2010

10-12 March, Dubai UAE.
Information: Orange Fairs and Events, PO

Box 111164, Dubai, UAE.
Tel: 971-4-2988144
Fax: 971-4-2987886
email: orangex@emirates.net.ae
Website: www.orangeairs.com

International Boston Seafood Show

14-16 March, Boston Convention and Exhibition Center, Boston, USA.
Tel: 1-207-8425500
Email: food@divcom.com
Website: bostonseafood.com

China Maritime 2010

16-18 March, Hong Kong
Information: Baird Event, 135 Sturt Street SouthBank, Melbourne, 3600 Australia
Tel: 61-3-96450411 Fax: 61-3-96450475
Email: marinfo@baird.com.au

April

11 Global Food & Feed Congress

20-23 April, Cancun Centre, Convention &

Exhibitions, Cancun, Mexico.
Information:
Email: roger.gilbert@iffi.org

ESE 2010

European Seafood Exposition and Seafood Processing Europe, 27-29 April, Parc des Expositions, Brussels, Belgium.
Information:
Diversified Business Communications, PO Box 7437, Portland Maine 0411, USA.
Tel: 1-207-8425500; Fax: 1-207-8425503
Email: food@divcom.com
Website: euroseafood.com

May

Tuna 2010 Bangkok, 11th INFOFISH World Tuna Trade Conference & Exhibition

20-22 May, Centra Grand & Bangkok convention Centre at Central World Bangkok, Thailand.
Further information: contact INFOFISH

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