

Fishing Technology Digest

A Newsletter on Fishing Technology, Gear and Methods, Vessels and Equipment



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Fishing Technologies.....	3,4	Information on various aspects of industry also appears in INFOFISH <i>International</i> . A supplementary section on 'Industry Notes' provides information on the latest developments in the global fisheries scene. New equipment and innovations are also featured. Comments and contributions are welcome, as are requests and recommendations for inclusion in the mailing list.
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18th INFOFISH WORLD TUNA TRADE CONFERENCE & EXHIBITION

Advancing Blue Transformation, Sustainable Development and Innovation through the Global Tuna Industry

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Venue: Shangri-La Hotel, Bangkok, Thailand

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COFI-FM's first meeting focuses on sustainable practices and promoting biodiversity

A new global fisheries management body began its inaugural meeting with key items on the agenda including best practices and approaches for the effective management of fisheries resources, and improvements in the Food and Agriculture Organisation of the United Nations (FAO) methodology to estimate the state and health of the world's marine fish stocks. The fight against Illegal, Unreported and Unregulated (IUU) fishing, the promotion of adaptive responses to the climate crisis, and mainstreaming biodiversity was the agenda of the COFI Sub-Committee on Fisheries Management's (COFI-FM) 15-18 January 2024 meeting, with a specific focus on small-scale fisheries. Over 500 million people globally depend, at least partially, on fisheries for their livelihoods - nearly half of them women when considering the whole value chain. While 65 percent of fish stocks were within biological sustainable levels, 35 percent were estimated to be at unsustainable levels, a proportion that has been increasing since the 1970s. "Improving global fisheries management remains crucial to restore ecosystems to a healthy and productive state and to protect the long-term supply of aquatic foods," said

FAO Director-General QU Dongyu in his address while opening the virtual plenary session. "This improvement also includes eliminating illegal, unreported, and unregulated fishing and on addressing the impacts of the climate crisis, and biodiversity degradation that are also heavily impacting aquatic and coastal ecosystems and dependent communities". Qu underscored that the Sub-Committee on Fisheries Management will play an important role in addressing these global and complex issues. It will identify and discuss major trends and issues in fisheries management that require measures and make recommendations to the Committee on Fisheries to help advance implementation of the FAO Code of Conduct for Responsible Fisheries and achieve the vision set out in FAO's Strategic Framework 2022-31 for better production, better nutrition, a better environment and a better life, leaving no one behind. The Director-General noted that the Sub-Committee on Fisheries Management will guide FAO's Blue Transformation roadmap and its core objective of ensuring that global fisheries resources including in lakes, rivers and seas - are efficiently and effectively managed.

Read more: [here](#).

The EU fisheries control system gets a major revamp

The European Union (EU) fisheries control regulation has been revised to modernise fishing activities, prevent overfishing and create a more effective and harmonised system. The changes include improved monitoring, traceability of catches, and the transition to full digitalisation, new technologies, and modern

data management. The rules also strengthen the fight against illegal, unreported, and unregulated fishing (IUU), and mandate full digital traceability along the supply chain. The IT tool CATCH will become compulsory for imported fishery products, simplifying the catch certification process.

Find the original article: [here](#).

Seaweed and mussel farms improve biodiversity and abundance of marine life: New study confirms

A study by 'The Nature Conservancy' in New Zealand and the Gulf of Maine has found that seaweed and shellfish farms provide habitat benefits to wild fish. The research, which used parallel sampling methods,

found that aquaculture habitats had higher abundances of fish settlers than natural habitats. The study also found that key settling fish species, such as the common triplefin, had better survival and growth after arriving in aquaculture habitats.

Read more information: [here](#).

New law to bolster fisheries sustainability and resilience in Sri Lanka

New fisheries legislation was on the agenda when a FAO delegation led by Manuel Barange, Assistant Director-General and Director of the Fisheries and Aquaculture Division, met Sri Lanka's Fisheries Minister, Douglas Devananda, for talks during a recent mission to this South Asian country. The



meeting coincided with the FAO Regional Conference for Asia and the Pacific, which emphasised the urgent need to transform aquatic food systems in response to the challenges posed by a growing population and a changing climate. The primary focus of the bilateral meeting was the forthcoming fisheries legislation, a collaborative effort between Sri Lanka and FAO. FAO is supporting Sri Lanka in drafting a new Fisheries Act to replace the Fisheries and Aquatic Resources Act No. 2 of 1996. The proposed legislation fully aligns with international law and provides a comprehensive framework for the sustainable management of fisheries resources, with a particular emphasis on safeguarding livelihoods in coastal fishing communities. Minister Devananda underscored the transformative potential of the new

draft legislation, highlighting critical concerns such as marine resource depletion and Illegal, Unreported and Unregulated fishing activities in his country. He urged FAO to continue its technical support in updating Sri Lanka's national plan of action to effectively combat these challenges. "We are grateful to FAO for the contribution granted in preparing the new Act. Once the cabinet grants the approval to the draft Act, it will be presented to the Parliament for discussion and approval," the minister said. "FAO will continue support Sri Lanka's fisheries sector," Barange said. "Our commitment with Blue Transformation aims at fostering long-term sustainability and resilience within Sri Lanka's aquatic food systems."

Find the original article: [here](#).

SeaFisher: A lightweight fish pen to move farms to deeper seas

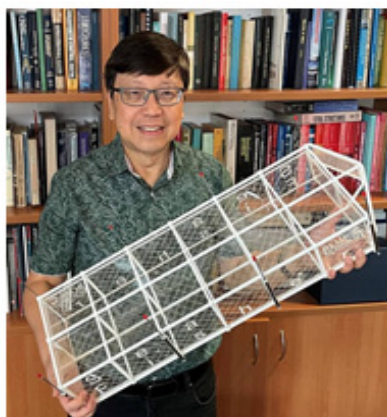


Photo: Professor Wang exhibiting the cost-effective SeaFisher model for offshore fish farming

The University of Queensland has co-lead a project to design a cost effective yet robust pen to expand fish farming into deeper ocean areas to help feed the growing global population. Professor Chien Ming Wang of the School of Civil Engineering said competition for space in sheltered nearshore waters meant the industry needed to move further offshore, prompting the Blue Economy Cooperative Research Centre to commission the project. "Our design will help fish farms meet a growing demand for seafood in an affordable and sustainable way," Professor Wang said. "Moving to deeper and cooler waters is great for the ocean environment and for fish health and welfare but if a pen is too flimsy, large ocean waves during storms would quickly tear it apart. "This solution named SeaFisher bundles high-density polyethylene (HDPE) pipes together with custom

brackets and connectors to create a frame, so we have strength in a lightweight structure. "To keep the pen and the fish safe, water pumps fill the pipes so it can be submerged in stormy weather and when the danger has passed, that ballast can be emptied so the pen rises to the surface again. "A front shield diverts debris around the pen while smooth, reinforced PET plastic netting keeps predators out." The pen is estimated to initially cost around USD 6 million, a fraction of the cost of other, more rigid offshore fish farming structures being used in the northern hemisphere. Professor Wang says modelling shows SeaFisher could grow ten times the fish of the other offshore pens on the market, some of which cost up to USD 180 million dollars. "This is a modular system of 20 metre cubic cages, linked two abreast to enable easy access for monitoring, feeding, and harvesting the fish stock," he said. "We estimate that each cubic cage could comfortably house 24 000 fully grown, 5-kilogram finfish. "It could be used to farm different finfish species next to each other and be adapted to grow seaweed, utilising waste from the fish pens to fertilise the plant crop. "By mooring the pen with a chain attached to a single suction anchor that allows it to move with water currents, the impact on the ocean floor is minimal." The design is patent-pending and scale-models will now be tested before prototypes are built. The project also involves Professor Joerg Baumeister at Griffith University, researchers at the University of Tasmania and industry partners. The [research paper](#) is published in the Journal of Marine Science and Engineering.

Read more about the technology: [here](#).

Two new shrimp breeds to battle disease in Thailand

Two new strains of Pacific white shrimp (*Litopenaeus vannamei*) have been successfully developed to strengthen Thailand's aquaculture industry, according to the Department of Fisheries. The new strains Petchada 1 (a fast-growing genotype) and Sida 1 (a disease-resistant genotype) will help keep the domestic shrimp-farming industry secure, said Praphan Leepayakul, Deputy Chief of Department of Fisheries. The department has worked with the Agricultural Research Development Agency to revive white shrimp farm numbers that have been in decline since 2012 due to an outbreak of Early Mortality Syndrome, also known as Acute Hepatopancreatic Necrosis Disease (EMS-AHPND). White shrimp is in great demand in both domestic and overseas markets. It is a major source of export revenue, generating an average of 100 billion baht (USD 2.77 billion) income per year. "The development could help in building up a sustainable shrimp industry," said Mr Praphan. The new strains were developed by a team of marine biologists using selective breeding and molecular genetic marker methods. To evaluate genetic diversity and study disease-free DNA, the team selected various strains of Pacific white shrimp from the United States, Guam and Thailand. The shrimp were fed in a biosecure system to study their growth capacity and genetic diversity.



The study showed that Thailand's domestic strains were the best as a base population. The Petchada 1 breeder was developed at the Genetic Aqua-Animal Research and Development Centre in Phetchaburi province. It has high growth potential when compared with shrimp from other sources. The Sida 1 breeder, which comes from the Genetic Aqua-Animal Research and Development Centre in Nakhon Si Thammarat province, has the highest EMS-AHPND survival rate, compared to its counterparts. "It is still under the research and development process," said Mr Praphan. "The next step is to test it on a commercial scale. We hope that it will be a significant step towards a sustainable shrimp industry by reducing losses among shrimp farmers.

Read more information: [here](#).

Revolutionary bottom trawl fishing equipment



With the system, fishers improve their catches with less work and time; the ocean floor isn't damaged and fewer greenhouse gasses are emitted; by-catch is reduced, and fish stocks are given a chance to rebound; and the world enjoys a sustainable source of ocean protein.

Benefits:

- Reduction in search time
- Fuel efficient and environmentally friendly fishing
- Increased catch efficiency/reduction in by-catch
- Reduced equipment maintenance costs
- Dynamically controlled net
- USV scouting
- Herding and deterrence

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The IFISH Conference 2024 focused on small-scale fisheries

The International Fishing Industry Safety and Health Conference (IFISH) is the world’s only conference devoted to safety and health in fisheries and aquaculture. It’s 6th edition, from 8 to 12 January 2024, was organised by the Food and Agriculture Organisation of the United Nations (FAO), the National Institute for Occupational Safety and Health (NIOSH) and the Northeast Centre for Occupational Safety and Health (NEC).

The conference, which drew together over 160 participants from government, research, industry, and worker organisations from over 31 countries, started with a pre-Conference workshop led by the United Nations agencies working on safety and health, namely the International Labour Organisation (ILO), the International Maritime Organisation (IMO), the World Health Organisation (WHO) and FAO. All four agencies reiterated their commitment to continue working together on these issues and promoting international safety standards, including the FAO Agreement on Port State Measures (PSMA), the Code of Conduct for Responsible Fisheries and the Voluntary Guidelines for Securing Sustainable Small-Scale fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines). Chapter 6 of the SSF Guidelines explicitly calls for States to “recognise that improved sea safety, which includes occupational health and safety, in small-scale fisheries (inland and marine), will best be achieved through the development and implementation of coherent and integrated national strategies”. In his opening speech, Manuel Barange, ADG/NFI Director, expressed concern about the number of fatalities at sea, most of them in small scale fisheries: “Small-scale fisheries employ 90% of those working in the capture fisheries value chain, yet they receive less attention



in terms of vessel construction, safety standards and safety training programmes for crew”. The discussions pointed out that there is still a divide between large scale and small-scale fisheries when it comes to safety thus the need to develop solutions that are cost effective, scalable, and locally available were stressed. In his keynote speech *Below the Radar: Safety aspects of small-scale fisheries in South Asia*, P Krishnan, BOBP-IGO Director, called for a wholesome safety measure that address all aspects of working condition of fishers including fisheries management, appropriate technology, economic incentives and enabling governance. During the five conference days, participants showcased their research and solutions, and exchanged with other experts to improve safety and health in the sector. The Conference highlighted the need to tailor occupational safety and health (OSH) to the needs of women who constitute 50 percent of the sector, and to develop standards and safety and health codes for aquaculture. The conference concluded with the creation of an IFISH Innovation Exchanges to facilitate innovation and the dissemination of solutions in fisheries, aquaculture and seafood processing.

Find more information: [here](#)

2024 Ocean Decade Conference

Three years after the start of the UN Decade of Ocean Science for Sustainable Development (2021-2030), a global conference will bring together the Ocean Decade community and partners to celebrate achievements and set joint priorities for the future of the Decade. The conference is hosted by Spain and co-organised with UNESCO’s Intergovernmental Oceanographic Commission (IOC/UNESCO), the 2024 UN Ocean Decade Conference will take place on 10-12 April 2024 in the coastal city of Barcelona. It will be a 3-day, in-person event co-led with a range of

partners: Government of Catalonia and the Barcelona City Council through the Barcelona Capital Náutica Foundation, and the Spanish National Ocean Decade Committee, which is led by the Ministry of Science and Innovation through the Spanish Research Council (CSIC). More details about the programme, registration process and calls for proposals for satellite events are available on the conference website. If you would like to receive updates, please sign up [here](#).

Bangladesh: Govt restructured cash incentives for shrimp export

Government of the People's Republic of Bangladesh restructured the cash incentives against exports of products under 43 categories, reducing the rates of export subsidy for all categories for the current financial year 2023-24. The Bangladesh Bank in a circular said that the government has decided to reduce the cash incentives against exports gradually as after the graduation of the country from the least developed status in 2026, the export subsidy would be prohibited under the provision of World Trade Organisation. According to the central bank circular, instead of the earlier circular on cash incentives for the FY24 issued on August 23 the new instructions on the export subsidy would be effective from January 1 to June 30. Exporters of frozen fish would get 4 per cent cash incentive for their products covered with ice weighing a maximum of 20 per cent of the total weight,

3 per cent cash incentive for products covered with ice weighing 20 per cent to 30 per cent of the weight, 2.5 per cent cash incentive for products covered with ice weighing 30 per cent to 40 per cent of the weight and 2 per cent cash incentive for products covered with ice weighing 40 per cent and above of the weight. Exporters of shrimp will get a 9 per cent cash incentive if their products are covered with ice weighing up to 20 per cent of the total weight. The exporters will get 8 per cent cash incentive for their products which are covered with ice weighing 20 per cent to 30 per cent of the weight, 7 per cent cash incentive for products covered with ice weighing 30 per cent to 40 per cent of the weight and 6 per cent cash incentive for products covered with ice weighing 40 per cent and above of the weight.

Read more information: [here](#).

Fiji: Draft Bill focuses on aquaculture

The Ministry of Fisheries convened a pivotal meeting with key government bodies and industry stakeholders to deliberate on the contents of the Draft Aquaculture Bill 2024, signaling a proactive approach to regulating Fiji's growing aquaculture sector. Addressing participants, permanent secretary for Fisheries and Forestry, Atelaita Rokosuka stressed the significance of the proposed legislation as a response to the intensifying activities in Fiji's waters. She emphasised that beyond establishing regulatory frameworks, the Bill reflected a steadfast commitment to conserving the marine environment and its diverse ecosystems. Ms Rokosuka said the primary aim of the Bill was to establish institutional arrangements and legislative measures conducive to the effective management of

aquaculture in Fiji, marking a pivotal step towards regulating and safeguarding this burgeoning segment within the fisheries sector. However, she also noted the Bill's limitations, highlighting its scope, which is to address specific activities falling under aquaculture. These activities include seaweed farming, fish spawning, fish farming, and the commercial rearing of aquatic organisms. The ministry's efforts are further bolstered by support from the Fisheries Forum Agency, ensuring the implementation of Fiji's Country Partnership Agreement and fostering collaborative endeavors in navigating the evolving landscape of aquaculture regulation.

To find the original article: Click [here](#).

India: NOAA trains Indian fishery stakeholders on TEDs

In a bid to conserve sea turtle populations and boost seafood export earnings, fisheries experts from the National Oceanic and Atmospheric Administration (NOAA) and officials from the U.S. State Department conducted a workshop in Kochi to educate stakeholders on the installation and operation of Turtle Excluder Devices (TEDs) in Indian fishing trawlers. The U.S. had previously banned Indian wild-caught shrimp exports due to the absence of TEDs in mechanical

trawlers, resulting in a significant loss of revenue. By implementing TEDs, Indian trawlers can obtain U.S. NOAA certification, allowing for the resumption of shrimp exports to the US market. The Marine Products Exports Development Authority (MPEDA) has taken steps to address the issue by working with the Central Institute of Fisheries Technology (CIFT) to modify TEDs and conduct field trials, aiming to improve the livelihoods of fishers and stakeholders in the industry.

Read more information: [here](#).

Kiribati: Strengthening country's seafood industry: Micro-Qualification training success on Kiritimati Island



In continuation of the ongoing capacity building on the island nation of Kiribati, approximately 25 participants completed two micro-qualification trainings on “Micro-Qualification in Establishing and Operating a Small Seafood Business” and “Maintaining Seafood Safety and Quality” on Kiritimati Island from 12 to 23 February. This was made possible through the European Union and Government of Sweden-funded University of the South Pacific (USP) Pacific European Union Marine Partnership (PEUMP) project. These trainings aim to upskill learners to improve their seafood businesses and safety and quality practices from ‘hook-to-plate.’ Tereere Tioti, Director of the Department

of Competent Authority at the Kiribati Ministry of Fisheries, Marine Resources Development, stated, “Fish is our main resource, and we need to encourage the establishment of small seafood businesses while ensuring the optimum quality of the fish and/or marine resources to help sustain the business and increase profits” .“This training complements our work at the Kiribati Ministry of Fisheries and Marine Resources Development, strengthening business knowledge and seafood handling aspects for our local vendors and fishers, which helps to enhance the quality of fish products while maintaining their freshness.” This programme strengthens knowledge, skills, and competencies in ensuring the successful start-up of a small seafood business, along with the guarantee of safety and quality standards post-harvest by demonstrating basic post-harvest seafood handling skills, outlining causes of seafood spoilage and quality control factors, and applying inspection techniques and guidelines to maintain seafood quality. “As the seafood industry continues to evolve, professionals within the seafood industry must upskill and adapt to these changes,” emphasized Shirleen Bala, the course developer and trainer for USP PEUMP. “Our two Micro-Qualifications are tailored to meet these needs, equipping individuals with the knowledge and skills to thrive in this dynamic sector.”

Read the full article: [here](#).

Malaysia and Philippines accepts WTO agreement on fisheries subsidies

Malaysia has ratified the World Trade Organisation’s (WTO) Fisheries Subsidies Agreement (FSA), which is a global effort to curb harmful fishing subsidies and protect fish stocks. Malaysia joins 68 other WTO members which have successfully ratified the FSA, said Investment, Trade and Industry Minister Tengku Datuk Seri Zafrul Abdul Aziz. Tengku Zafrul is currently attending the 13th WTO Ministerial Conference in Abu Dhabi, United Arab Emirates, where the FSA was ratified. He said the ratification demonstrated Malaysia’s commitment to global cooperation and responsible stewardship

of its oceans. “I urge all remaining (WTO) members to join us and accelerate their domestic ratification process and contribute to the preservation of marine biodiversity and the livelihoods of millions of people who depend on fishing”.

Simultaneously, WTO-DG Okonjo-Iweala said: “I am delighted that the Philippines has formally accepted the Agreement on Fisheries Subsidies at MC13. Doing so at the very beginning of our Fish Working Session at MC13 set a positive tone for the rest of the meeting. This action demonstrates a strong endorsement of the WTO by the Philippines, as well as its dedication to preserving our oceans for the people who rely on them for livelihood and food security, and for fostering global

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cooperation in our shared aspiration for sustainability.” Secretary Tiu Laurel said: “The Philippines is pleased to announce, that having completed the domestic process, we have successfully ratified the first WTO Agreement on Fisheries Subsidies on the occasion of the 13th Ministerial Conference in this vibrant city of Abu Dhabi. This is a significant milestone in our continuing effort to show our country's commitment to address the global concern over illegal, unreported and unregulated fishing, and the conservation and

sustainable use of our oceans. As the first WTO Fisheries Subsidies Agreement enters into force, this will usher in a new era of cooperation and collaboration among nations. We dedicate this milestone to the Filipino people, the country's fisheries and aquatic resources, and most importantly the communities that stand to benefit from the WTO Agreement.

Find more information : [here](#).

Maldives: Government established new company to promote seafood products globally

President Dr Mohamed Muizzu has established Maldives Fisheries and Ocean Resources Marketing and Promotion Limited. This Government owned company has fully vested with a 100% stake and carries fixed liabilities. The President set up the company per the authority vested under Section 15 of the Companies Act (7/2023) and the announcement was made by the President through a Decree No. 03/2024. The

company was founded with the primary objective of expanding the nation's fishing industry and enhancing its social benefits by promoting and advertising Maldivian products on the global market. This includes products from aquaculture, mariculture, and all marine sources. To boost revenue, the company will launch a distinctive brand for local fisheries, advertising it locally and in various lucrative international markets.

Find more information: [here](#).

Papua New Guinea: Fisheries hub to be built

Justin Ilakini, Managing Director of the National Fisheries Authority of Papua New Guinea, provided an update on the K105 million (USD 27.78 million) project initiated in January 2022 aimed at developing the Voco Point coastal fisheries hub in Lae. He said that the project, which had experienced a two-year delay due to funding issues, will now be resumed back this year. While outlining the project phases to establish a coastal fisheries hub for products from Morobe

and its surrounding provinces with inland fisheries, aquaculture and coastal fisheries, he emphasised the hub's role in enhancing the mobilisation of seafood volume and supply within the region to promote healthier nutrition intake. This initiative aligns with the suggestions of Lae MP John Rosso to address the needs of the community, meet NFA requirements, and establish key offshore processing infrastructures.

Read more information: [here](#).

Thailand: Restricts commercial fishing in Gulf of Thailand for three months

The Fisheries Department under Thailand's Ministry for Agriculture and Cooperatives has announced a 3-month commercial fishing restriction in the Gulf of Thailand started from 15 February to protect spawning mackerel and to allow their fry to mature. The controls cover about 26 400 sq.m, from the tip of the Khao Mong Lai peninsula of Prachuap Khiri Khan to Don Sak district of Surat Thani province. The second phase, will start from May 16 until June 14, covers an area of about 8 100 sq.m from the tip of Khao Mong Lai peninsula to Hua Hin in Prachuap Khiri Khan. Under the restrictions, only small boats with gross weight of under 10 tonnes and engine

of under 280 horsepower are allowed to fish in the specified area. Types of equipment that can be used are controlled, such as no fishing nets over 2 500 metres long and a minimum mesh size of 2.5cm. According to the Fisheries Department, the commercial fishing controls imposed last year resulted in an increase in the mackerel population in the Gulf, as evident in the size of catch last year, estimated at about 41 310 tonnes, worth about 3.3 billion THB, compared to 35 708 tonnes in 2022. A ceremony to mark the start of the fishing limitations will be held on February 14 at the pier in Paknam sub-district, Chumphon province under the chair of Minister for Agriculture and Cooperatives of Thailand, Thammanat Prompao.

Find the full article: [here](#).

Pacific oyster farming: A practical manual

Mercer, M., Gennari, L. and Lovatelli, A., 2024. Pacific oyster farming – A practical manual. FAO fisheries and Aquaculture Technical Papers. No. 696. FAO. Rome. 290p.



The purpose of this manual is to give the reader a foundation of practical knowledge regarding all aspects of Pacific oyster cultivation. It is targeted at new entrants to the market wishing to establish a farm, and existing operators who wish to develop their farms and explore new cultivation techniques. The methodologies described can be applied both to low-tech, low budget, small-scale farming operations and to high-tech, big budget, industrial-scale aquaculture production enterprises. This guide focuses on the functional expertise and technical equipment required to construct and manage an operational farm in the diverse environmental and physical locations in which they can be situated, from the initial stages of finding and selecting a suitable site, to the conclusion of the first production cycle and harvesting the crop. The manual contains a brief introduction which describes the relevance of the species with regards to global aquaculture production figures and how it can form

an important part of future food production strategies. Chapter 2 describes the anatomy and biology of *Crassostrea gigas* and gives an indication as to the environmental conditions in which the species thrives as well as the pathologies and predators that can result in poor health leading to potential mortalities. Chapter 3 deals with all aspects of undertaking a survey of potential oyster farming sites and what data should be collected and examined to assess a site's suitability, but also which areas are best suited to different cultivation techniques. After this, Chapter 4 introduces the main farming techniques that will be described in detail in the following chapters, which includes off-bottom cultivation, on-bottom cultivation, and suspended cultivation, and gives details of some of the most common cultivation equipment necessary to undertake these operations. The techniques and strategies necessary to procure seed oysters and how to develop them through the nursery stage are also introduced. This includes the basic principles of upwelling, which then leads into Chapter 5, which provides a detailed description of how to build and operate one particular example of a Floating Upwelling System (Flupsy) which is suitable for use in remote but sheltered conditions. Chapters 6, 7 and 8 constitute the main body of the manual and provide an in-depth look into the three major cultivation techniques that this guide concentrates on: "Farming with trestles and bags in the intertidal zone", "On-bottom cultivation in the intertidal or subtidal zone" and "Offshore longline cultivation".

Download this technical manual with no cost: [here](#).

APRIL

23-25, Seafood Expo Global (SEG), Barcelona, Spain
<https://www.seafoodexpo.com/global/>

MAY

8-11, International Indonesia Seafood & Meat (IISM), Jakarta, Indonesia
<https://iism-expo.com//>

15-17, Seafood Expo Eurasia, Istanbul, Türkiye
<https://seafoodexpoeurasia.com/en/>

20-22, 18th INFOFISH World Tuna Trade Conference & Exhibition Bangkok, Thailand
www.tuna.infofish.org

JUNE

19-21, Aquaculture Taiwan 2024, Tainan, Taiwan
<https://www.aquaculturetaiwan.com/>

JULY

2-5, Asian Pacific Aquaculture (APA2024) Surabaya, Indonesia
<https://www.was.org/meeting/code/APA2024>

AUGUST

21-23, 26th Japan International Seafood & Technology Expo, Tokyo, Japan
<https://seafoodshow-japan.com/tokyo/>

21-23, Vietnam Fisheries International Exhibition, Ho Chi Minh, Vietnam
<https://vietfish.com.vn/>

28-30, 18th Shanghai International Fisheries and Seafood Exhibition, Shanghai, China
www.worldseafoodshanghai.com/en

SEPTEMBER

4-6, Seafood Expo Asia 2024 Singapore
www.seafoodexpo.com/asia/

17-19, Global Fishery Forum & Seafood Expo Russia 2024, Saint Petersburg, Russia
<https://seafoodexporussia.com/en/>

OCTOBER

30 Oct - 1 Nov, China Fisheries & Seafood Expo (CFSE) Qingdao, China
<https://chinaseafoodexpo.com/>

The Fishing Technology Digest for Asia-Pacific Region



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