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Artemia side event at the FAO Sub-Committee on Aquaculture, Mexico

Left to right: Dr Matthias Halwart, COFI SCA Technical Secretary (speaking), Prof. Patrick Sorgeloos, Dr Eduardo Leano, Prof. Yeong Yik Sung (IAAC Chair) and Betty Nyonje.

A side event on the *Potential of brine shrimp Artemia production for aquaculture transformation* was held on 16 May at the 12th Session of the FAO Sub-Committee on Aquaculture (COFI-SCA), Mermosillo, Mexico (16-19 May).

Artemia is a critical resource for the aquaculture industry, underpinning around 10 million tonnes of fish and crustacean end product. The event was an opportunity for the newly established International Artemia Aquaculture Consortium (IAAC) to explore issues in providing a sustainable supply of *Artemia* cysts to support hatcheries and seed to the aquaculture industry. The consortium is hosted by NACA.

The event was opened by Dr Matthias Halwart, COFI SCA Technical Secretary, who reflected on FAO's early publications and ongoing role promoting good practices in *Artemia* hatchery production, most recently through a workshop on SDG-aligned Artemia Aquaculture, held in conjunction with the Global Conference on Aquaculture Millennium +20 in Shanghai.

Prof. Patrick Sorgeloos gave a presentation on the history of *Artemia* use in aquaculture from the Kyoto conference in 1976; the establishment of the Artemia Reference Center and the International Study on *Artemia*; the boom in hatchery utilisation of *Artemia* for marine fish and shrimp; and the integration of *Artemia* production with artisanal salt farming.

Dr Betty Nyonje, Kenya Marine and Fisheries Research Institute, gave a presentation on *Artemia* production interests and activities in Africa.

Dr Eduard Leano, NACA, gave a presentation on formation of the IAAC, its recent activities including webinars on *Artemia* management in the Great Salt Lake, activities in Africa, and the status of cyst utilisation in hatcheries world-wide.

Prof. Yeong Yik Sung, Chair of the IAAC, gave a presentation on a series of ten recommendations formulated by the consortium. This was followed by a series of video interviews between consortium members and Mr Simon Wilkinson, NACA, on recent activities and developments:

- Pond production of *Artemia*
  Dr Nguyen Van Hoa, Can Tho University, Vietnam and Dr Meezanur Rahman, Artemia4Bangladesh, WorldFish

- *Artemia* resources and use in China
  Prof. Liying Sui, Director Asian Regional Artemia Reference Center

- Sustainable harvesting of inland salt lakes
  Mr Thomas Bosteels, CEO Great Salt Lake Brine Shrimp Cooperative

- Potential for improved use of *Artemia* in fish and shrimp hatcheries
  Dr Philippe Léger, former Managing Director of Inve Aquaculture (Benchmark Holdings Group) and Mr David Garriquez, Sustainable Shrimp Farming Solutions LLC

- Use of *Artemia* biomass as human food
  Dr Shahina Syeda, WorldFish

The interviews will be made available on the NACA YouTube channel shortly, under the International Artemia Aquaculture Consortium playlist:

https://www.youtube.com/@aquacultureasia/playlists

The discussions and recommendations from the event were tabled at the COFI SCA and reflected in the report, which will be released by FAO in due course.

Great Salt Lake Brine Shrimp Fishery Meets MSC's Fishery Standard

The Great Salt Lake is still the largest supplier of Artemia cysts to the global aquaculture industry.

SALT LAKE CITY, May 15, 2023 – Utah's Great Salt Lake brine shrimp fishery has officially achieved the Marine Stewardship Council's (MSC) sustainable wild fishery certification, making it the first inland fishery in the United States to earn this prestigious certification.

Brine shrimp (*Artemia franciscana*) are a small, shrimp-like crustacean that live in hypersaline lake environments and are a vital part of the lake's ecosystem, serving as a food source for numerous bird species and providing an important source of income for local fishermen.

The MSC certification process is rigorous and requires fisheries to meet strict standards for sustainable fishing practices, environmental impact, and management. The Great Salt Lake brine shrimp fishery underwent a thorough 8-month assessment by an independent, third-party certifier and was found to meet MSC's criteria for environmentally sustainability fishing practices.

"Great Salt Lake brine shrimp fishery's achievement of MSC certification is a testament to the hard work and dedication of local fishermen, who have been practicing sustainable fishing for generations," said Nicole Condon, MSC US Program Director. "By earning this certification, the fishery is demonstrating their commitment to the long-term health of the lake's ecosystem and the communities that depend on it."

Great Salt Lake is the largest saltwater lake in the Western Hemisphere and is home to one of the largest brine shrimp populations in the world. It is also the only commercial source of brine shrimp in the Western Hemisphere.

The MSC fishery certificate is held by the Great Salt Lake Brine Shrimp Cooperative. The Cooperative uses unique gear such as rakes and containment booms to harvest the cysts of brine shrimp. They also use spotter planes to identify brine shrimp cyst blooms from above. Brine shrimp cysts are stored and hatched for use as live feed, for example for prawn hatcheries, with approximately 99% of the product exported to more than 50 countries around the world.

"Sustainability defines our industry in unique ways," said Timothy Hawkes, Vice Chair and General Counsel for Great Salt Lake Brine Shrimp Cooperative. "The harvest management system in place on Great Salt Lake—developed in collaboration between industry and the State of Utah—harvests only the excess cysts in the system. That management system sets up the brine shrimp population for the best possible start the following year, which benefits not only the population itself, but the brine shrimp industry and the tens of millions of migratory birds that also rely on the resource. We are grateful to be recognised for our dedication to sustainability with the MSC certification."

Reported Aquatic Animal Diseases in the Asia-Pacific Region during the Fourth Quarter of 2022

With the implementation of the new aquatic animal disease reporting in the Asia Pacific region from January 2021, and in lieu of the published QAAD Reports (last issue published was 4th quarter of 2020), NACA is publishing reported aquatic animal diseases submitted by countries in the Asia-Pacific region. This report covers the fourth quarter of 2022 and the original and updated reports can be accessed from the QAAD page at: https://enaca.org/?id=8

The following diseases were reported:

Finfish Diseases

- **Infection with *Aphanomyces invadans* (EUS):** Bangladesh in rohu (*Labeo rohita*), catla (*Labeo catla*) and mrigal (*Cirrhinus mrigala*); and, India in *Puntius japonicus*, *C. mrigala*, snakeheads (*Channa marulius*, *C. striata*), and catla (*Labeo catla*).
- **Infection with red seabream iridovirus (RSIV):** Chinese Taipei in Asian seabass (*Lates calcarifer*), hybrid grouper (*Epinephelus fuscoguttatus* x *lanceolatus*) and goldlined seabream (*Rhabdosarbus sarga*); and, India (ISKNV) in freshwater angelfish (*Pterophyllum scalare*), Ram cichlid (*Mikrogeophagus remirezi*), Oscar (*Astronatus oscellatus*) and *L. calcarifer*.
- **Carp edema virus disease (CEV):** India in Koi carps (*Cyprinus carpio*)
- **Viral encephalopathy and retinopathy (VER):** Chinese Taipei in hybrid grouper (*Epinephelus fuscoguttatus* x *lanceolatus*).
- **Infection with Tilapia lake virus (TILV):** Chinese Taipei in tilapia (*Oreochromis niloticus*); and, the Philippines in tilapia juveniles (*Oreochromis*).
- **Enteric septicaemia of catfish:** Vietnam in pangas catfish (*Pangasius microneme* and *P. hypophthalmus*).

Molluscan Diseases

- **Infection with *Perkinsus olseni*:** India in mussel (*Perna viridis*).

Crustacean Diseases

- **Infection with white spot syndrome virus (WSSV):** Bangladesh in tiger shrimp (*Penaeus monodon*) and mud crab (*Scylla serrata*); Chinese Taipei in whiteleg shrimp (*P. vannamei*); India in *P. monodon* and *P. vannamei*; the Philippines in grow-out of *P. monodon*, *P. vannamei* and *S. serrata*; and Vietnam in *P. monodon* and *P. vannamei*.
- **Infection with infectious hypodermal and haematopoietic necrosis virus (IHHNV):** The Philippines in *P. vannamei*.
- **Acute hepatopancreatic necrosis disease (AHPND):** The Philippines in *P. vannamei* and *P. monodon*; and, Vietnam in *P. monodon* and *P. vannamei*.
- **Infection with Infectious myonecrosis virus (IMNV):** India in *P. vannamei*.
- **Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (EHP):** India in *P. vannamei*; and, the Philippines in *P. vannamei* and *P. monodon*.

Amphibian Diseases

- Infection with *Batrachochytrium dendrobatidis*: Australia in adult tusked frog (*Adelotus brevis*) and growling grass frog (*Litoria raniformis*).

Other Diseases

Bangladesh reported Infection with *Streptococcus agalactiae* in tilapia (*O. niloticus*), and Infection with *Aeromonas* spp. in climbing perch (*Anabas testudineus*), shing catfish (*Heteropneustes fossilis*), gulsha (*Mystus cavasius*) and pabda (*Ompok pabda*).

E.M. Leaño
Senior Programme Officer
Health and Biosecurity

Report of the 21st Asia Regional Advisory Group on Aquatic Animal Health

This report summaries the proceedings of the 21st meeting of the Regional Advisory Group on Aquatic Animal Health, held 17-18 November 2022. The role of the group is to review trends in disease and emerging threats in the region, identify developments in global disease issues and standards, to evaluate the Quarterly Aquatic Animal Disease Reporting Program and to provide guidance on regional strategies to improve health management. The meeting discussed:

- Progress on NACA's Asia Regional Aquatic Animal Health Program.
- Updates from the OIE Aquatic Animal Health Standards Commission.
- Aquaculture biosecurity.
- WOAH Aquatic Animal Health Strategy 2021-2025.
- Report on aquatic animal health activities of WOAH-RRAP.
- Updates on prevention and control measures on important aquatic animal diseases in China.
- Updates on regional disease reporting and disease list.

Download the report from: https://enaca.org/?id=1269

Thai Fish Project

Left to right: Dr Yuan Derun and Simon Wilkinson (NACA), Dr Ikuo Horono (TUMSAT), Dr Izumi Tsurita (Project Coordinator) and Khun Pakpitchaya Borvonsin, Project Assistant.

Dr Izumi Tsurita, Coordinator for the JICA-funded Thai Fish Project visited the NACA Secretariat on 18 May to discuss collaboration in outreach and extension of the project's conclusion. The meeting was also attended by Dr Ikuo Hirono from the Tokyo University of Marine Science and Technology (TUMSAT), and Khun Pakpitchaya Borvonsin, Project Assistant.

More formally known as the Research Project for the Utilization of Thailand Local Genetic Resources to Develop Novel Farmed Fish for Global Market, the project led by TUMSAT and the Thai Department of Fisheries, is engaging many research institutes in both Japan and Thailand and has involved around 200 scientists. The project commenced on 1 June 2019 and will conclude in May 2024.

The Thai Fish Project aims to promote domestication and wise use of Thai native aquatic species by increasing farm productivity, conserving genetic resources, and reducing infectious disease impact.

Thai Fish Project is engaged in a wide range of activities, principally concerning two species, the Asian seabass *Lates calcarifer*, and banana shrimp *Penaeus merguiensis*.

Key outputs of the project's research are:

- Molecular markers for selection of economically important traits.
- Identification of families from the target species with economically important traits.
- Development of vaccines against important diseases of seabass and shrimp.
- Improvement of the nutritional profile (DHA and EPA) of farmed seabass.
- Development of novel maturation induction method for female banana shrimp.
- Development of germ cell transplantation and preservation techniques.

As the project approaches its conclusion, NACA has undertaken to assist with dissemination and outreach of the conclusions and techniques that have been developed.

For more information about the Thai Fish Project, please visit:

https://www.facebook.com/thaifishproject/

NACA participates in Coordinating Working Parties on Fisheries Statistics

NACA attended an intersessional meeting of the Coordinating Working Parties (CWP) as a virtual participant in a hybrid meeting from 28-30 June 2023.

The meeting combined the 8th meeting of the Aquaculture Subject Group and 30th meeting of the Fisheries Subject Group, and was held at the North East Atlantic Fisheries Commission Headquarters in London.

With regards to aquaculture subject matter, the meeting considered progress on the CWP ad-hoc Task Group on Aquaculture, whose major activity has been the development of the aquaculture component of the CWP Handbook, with input from NACA.

Comprehensive global and regional statistics on fisheries and aquaculture require national statistical programs to be coherent and consistent, and based on a common set of statistical standards which apply internationally recognized definitions, classifications and codes. The CWP Handbook was created to serve as the basis for this integration, initially for capture fisheries but now it is being extended to aquaculture.

The Handbook covers the concepts, definitions, classifications and data exchange protocols including the codes as applied to capture fisheries statistics and aquaculture globally, with a focus on the principles applicable to regional and global organizations. While national agencies often use statistical systems which are developed for specific national purposes and thus may differ from those employed internationally, the principles described in the Handbook may also be relevant to those national systems.

The intended users of the Handbook are CWP Member agencies, national fishery and aquaculture statistics offices, national administrations and other fishery and aquaculture agencies. The Handbook is also intended to assist in the development of national standards as logical extensions of the international standards.

The scope of the Handbook is to:

- Document concepts that are relevant to fishery and aquaculture statistics.
- Define statistical standards for specialized concepts as adopted by CWP.
- Define statistical standards for concepts that have a wider scope as adopted internationally.
- Review methodological issues that are specific to fishery and aquaculture statistics.
- Define minimum requirements for data collection.
- Define desirable levels of information.

Other issues relevant to aquaculture discussed at the meeting included discussions on workflow and confidentiality requirements in the collection, handling and presentation of statistical data, a report on the Task Group on Small-Scale Fisheries, issues related to employment statistics, and amendments to the ASFIS List of Species for Fishery Statistics Purposes.

NACA signs MOU with Cagayan Valley R&D Consortium

NACA signed an MOU signed with the Cagayan Valley Agriculture, Aquatic and Natural Resources Research and Development Consortium Institutions (CVAARRD) on 1 June, during a visit by a CVAARRD delegation to the Secretariat. The MOU was signed by Dr Ricmar P. Aquino, RRDCC Chair and University President of ICU, and Dr Huang Jie, Director General of NACA in the presence of the 35-person delegation.

The CVAARRD Consortium is a non-profit organisation that was created to promote science and technology applications for agriculture, aquatic, forestry and natural resource sectors. The consortium is a venue for joint planning, monitoring, evaluation and sharing of resources through collaborative interventions mong its members through the implementation of R&D management and coordination, strategic R&D / extension, R&D results utilisation, capability building and governance, policy analysis and advocacy.

The purpose of the MOU is to facilitate collaboration between NACA and the CVAARRD Consortium in professional capacity building, joint research, training and experiential exchanges and research visits. It is anticipated that cooperation will also include training, workshops and learning programmes, sharing information and organisation of joint conferences, seminars, and events.

Shrimp Summit, 24-26 July, Ho Chi Minh City, Vietnam

The 2023 Shrimp Summit will convene the global seafood value chain to address the critical challlenges of Asia's shrimp-farming sector, from stagnant production to growers' livelihoods, with a cross-topic focus on sustainability and climate change. The Summit is presented by The Center for Responsible Seafood (TCRS) and co-hosted by the Global Seafood Alliance.

The format of the 2023 Shrimp Summit will allow the industry to develop a common understanding of issues, address key challenges through discussion and work toward consensus and actionable solutions.

This in-person and virtual event will feature discussions, relevant content and informative webinars before, during and after the event in the TCRS Online Community.

Session topics include: Global Production & Markets; Sustainable Feeds; Improver Programs; Investment; Shrimp Breeding & Diseases; Growout Intensification; Collective Marketing; and Innovations. For more information, visit:

https://responsibleseafood.org/shrimp-summit/

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NACA is a network composed of 19 member governments in the Asia-Pacific Region.