



Consultations address antimicrobial resistance risk in aquaculture



Participants in the regional consultations on antimicrobial usage and resistance.

Two consultations on antimicrobial resistance (AMR) risks in aquaculture were jointly organised in Bangkok from 4-7 September by FAO and NACA with much appreciated financial support from FAO and USAID. The consultations were attended by seventeen governments in the Asia-Pacific region, the World Organization for Animal Health (OIE), WorldFish and Chulalongkorn University.

Although control over the use of antimicrobial substances has been strengthened over the past twenty years, mainly from the perspective of international trade and food safety, they are still commonly used in livestock industries and controls over the use of antimicrobial substances in aquaculture production is still far from adequate or effective. Improper and imprudent use of these substances can significantly contribute to the development of resistance in microorganisms, due to the nature of the aquatic environment and the ways in which cultured animals are handled.

AMR is a growing issue with significant implications for both human and animal health. However, data on pathogen resistance in aquaculture and other livestock industries has not been routinely or systematically collected. The purpose of the regional consultations was to initiate action on this issue, identifying interventions to assess antimicrobial usage in Asian aquaculture and a strategy to minimise the long term AMR risks.

In this context FAO, NACA and USAID are working together to undertake a regional assessment on antimicrobial use (AMU) and the associated risks of AMR in aquaculture. This study will assess the current status of AMU in selected countries as well as their regulation and governance, and identify major issues, gaps and constraints in minimising AMR risks.

The purpose of the regional consultations was to identify actions and develop a strategy to address AMR risks associated with aquaculture, based on an assessment of the status of AMU and AMR. This initiative is part of a broader, coordinated "One Health" movement across the entire human health and agricultural sectors to address prudent usage of antimicrobial substances to reduce AMR risks.

The meeting was opened with welcome remarks from Ms Xiangjun Yao, Regional Programme Leader for FAO-RAP; Dr Daniel Schar, Senior Regional Emerging Infectious Diseases Advisor for USAID; Dr Chumnarn Pongsri, Deputy Director General of the Thai Department of Fisheries; and Dr Cherdasak Virapat, Director General of NACA.

The first consultation addressed the status of AMU and AMR in the region, current national initiatives and regulatory instruments, and the development of a regional framework for AMR surveillance. Issues discussed included:

- The status of antimicrobial usage and antimicrobial resistance in the region.
- Antimicrobial resistance surveillance initiatives in Asian aquaculture.
- Development of a framework for antimicrobial resistance surveillance in Asia.
- A regional overview of current laws and regulations relevant to antimicrobial usage and resistance.
- Antimicrobial resistance in important bacterial diseases of aquaculture.

The discussions paved the way for the second consultation, which concerned the development of a regional guideline on AMR surveillance in aquaculture. Issues addressed included:

- Developing the framework for antimicrobial resistance monitoring and surveillance in Asia, including harmonisation of national antimicrobial resistance surveillance and monitoring programs for aquatic animals under the OIE Aquatic Animal Health Code; risk analysis of foodborne antimicrobial resistance and the Codex Alimentarius; methods and performance standards on AST from aquatic bacterial isolates and the Assessment Tool for Laboratory and AMR Surveillance Systems (ATLASS).
- Establishing the principles, purpose and objectives of the AMR surveillance guidelines for aquaculture including design, priorities and sampling strategies, methods for bacterial isolation, development of antibiotic panels and isolate storage.

- Guidelines on data management, including tools, storage and sharing of AMR surveillance data and implementation plans.

The endpoint envisaged for this initiative is the development of a guideline and framework for AMR monitoring and surveillance in Asia that will include regional guidelines on sampling approaches, laboratory testing and data management. These are anticipated to contribute towards the development of evidence-based treatments guidelines for common pathogens in aquatic animals and to reinforce good veterinary practices in lieu of unwarranted metaphylaxis and broad-spectrum preventative treatments.

Video recordings of selected technical presentations will be made available on the NACA website in due course.

ASEAN consultation on emergency aquatic animal disease preparedness and response



Aquaculture production in Southeast Asia has grown rapidly over the past two decades, but the industry has been severely impacted on many occasions by infectious diseases. The recent outbreak of acute hepatopancreatic necrosis disease (AHPND) in shrimp, for example, caused severe economic losses in Vietnam, Thailand, Malaysia and the Philippines.

A key factor in the spread of infectious diseases has been the irresponsible and unchecked movement of live aquatic animals both within and between countries, with inadequate attention to biosecurity. A lack of capacity responding to disease emergencies has also been a factor, complicated by the fact that emerging pathogens of aquatic animals are often previously unknown to science, and may spread widely before they are recognised.

As a result of the AHPND outbreak, ASEAN member states identified the development of emergency preparedness and response systems and contingency planning for managing aquatic animal disease outbreaks as a priority action.

The ASEAN Regional Consultation on Aquatic Emergency Preparedness and Response Systems for Effective Management of Transboundary Disease Outbreaks in Southeast Asia was held in Bangkok, 20-22 August. The consultation was funded by Japan-ASEAN Integration Fund (JAIF) and organised by the Department of Fisheries, Thailand and SEAFDEC Aquaculture Department, Philippines.

The objective of the consultation was to bring together ASEAN member states and technical experts to discuss the current status of emergency animal disease preparedness

and response systems, and to identify gaps and opportunities for regional cooperation in management of transboundary disease. The consultation was tasked with:

- Assessing the existing regulatory framework, operating procedures and national aquatic animal health management strategies of ASEAN member states.
- Assessing the need for a regional ASEAN emergency preparedness and response system.
- Identifying gaps and priority areas for R&D collaboration.
- Enhancing cooperation amongst member states, international organisations and other stakeholders in management of emergency aquatic animal disease outbreaks.

The consultation was opened with remarks from Dr Chumnarn Pongsri, Deputy Director General of the Thai Department of Fisheries, Dr Kom Silpajarn, Secretary-General of SEAFDEC, Dr Koh-ichiro Mori, Deputy Chief of SEAFDEC/AQD and Ms Janejit Kongkumnerd, Director of the Aquatic Animal Health Research and Development Division, Thai Department of Fisheries.

The consultation provided an overview of the current status of emergency disease preparedness and response systems and regulatory arrangements in the region, with presentations made by Brunei Darussalam, Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam. Technical presentations included:

- A demonstration of DisasterAWARE, a web-based software system used by many agencies around the world to visualise data and manage response to different types of disaster and natural hazards, by Dr Chris Chiesa, Deputy Executive Director of the Pacific Disaster Center.

- A historical overview of transboundary disease incidents and impact, by Dr Eduardo Leano, NACA's Aquatic Animal Health Programme Coordinator.

- The trade implications of disease outbreaks, by Dr Jing Wang of the World Organization for Animal Health (OIE).

- The response to the recent examples of tilapia lake virus (TiLV) was described by Dr Seangchan Senapin, Deputy Director of Centex Shrimp and Head of the Shrimp Molecular Biology and Biotechnology Laboratory, National Science and Technology Development Agency, Thailand.

- Another recent transboundary disease emergency, AHPND in shrimp, was described by Dr Kallaya Sritunyalucksana, National Center of Genetic Engineering and Biotechnology (BIOTEC), Thailand.

- Presentations on import risk analysis and assessment and emergency preparedness and response systems as an element of an aquatic animal health management and biosecurity strategy, by Dr Melba Reantaso, FAO.

The consultation broke into a workshop session with participants tasked to identify gaps, make policy recommendations and highlight priority areas for collaborative research and development on regional emergency disease preparedness and response.

The consultation wrapped up with a field trip to the Nam Sai Farms tilapia hatchery, and to the Royal Sea Farming and Aquaculture Demonstration Project in Petchaburi Province.

The proceedings of the meeting will be published by SEAFDEC AQD and audio recordings of the technical presentations will be made available on the NACA website in due course.

Applications for the position of Director General, NACA

The incumbent Director General, Dr Cherdsak Virapat will be completing his term of office on 30 April 2019. The NACA Governing Council has instructed to call for applications from suitably qualified and experienced persons from NACA member states for the position of Director General, tenable from May 2019 for a fixed period of five years. The selected candidate is expected to assume the position by 1 May 2019 after a brief handover period.

Applications will close at 5 PM (Bangkok time) on 15 January 2019. Candidates must be less than 55 years of age on the closing date. Shortlisted candidates will be expected to attend an interview with the 30th NACA Governing Council meeting, which will be held 25-29 March 2019 in People's Republic of China. Only short listed candidates will be notified of the results of application.

Responsibilities

The Director General is responsible for developing and conducting a work programme over a five year period in accordance with the mandate of NACA. The position will be based in the NACA Secretariat, Bangkok, Thailand.

The incumbent will be expected to travel extensively within and outside the region. The responsibilities of the Director General will include management of the Secretariat staff in pursuit of the goals of NACA both in terms of technical and administrative performance standards, and will be the chief financial officer.

Further supporting information can be found on the NACA website <https://enaca.org>.

Qualifications

- A post-graduate degree related to aquaculture.
- A minimum of 15 years' experience in regional or international aquaculture development and research.
- An established track record of successful fund raising.
- Previous experience in management and administration.
- Excellent inter-personal skills and experience in human resource management.
- Must be a citizen of a NACA member state.

Remuneration

The remuneration package is commensurate with equivalent international / regional positions and includes health insurance, child education allowance, relocation and dependents allowances and a vehicle.

Applications

Those intending to apply for the position should submit the following via email to cherdsak.virapat@enaca.org with copies to hshakeel@mrc.gov.mv and ljy@cafs.ac.cn.

Applications should include:

- Detailed curriculum vitae, including publication list and proof of age.
- A short statement why you are seeking the position of Director General (not exceeding one page).
- A short statement of your aspirations for NACA (not exceeding three pages).

Aqua 2018 – #WeRAquaculture

Aquaculture has seen spectacular growth in recent years, and Aqua 2018 celebrated aquaculture's role as one of the most important food industries worldwide. Held 25-29 August in Montpellier, France, Aqua 2018 brought together scientists, practitioners, students, industry and civil society to highlight the latest global developments in aquaculture research and innovation. Video highlights are available for viewing online, courtesy of FAO: <https://youtu.be/rwdH813SeH>



Asian Aquaculture 2018: Celebrating Asian Aquaculture, 3-6 December, Thailand

Asian Aquaculture 2018 is the first major aquaculture conference organised by the Asian Institute of Technology dedicated to the sustained progress of aquaculture in the Asian region, with a better understanding of the systems practiced,

highlighting regional needs and constraints, and imbibing the global progress on sustainable intensification of production systems.

The conference will bring together world's leading expertise in innovative aquaculture, present emerging technological advancements for better husbandry and feeding practices to stem the disease tides in aquaculture, and set the goal for a sustainable enhancement of output from aquaculture relevant to the Asia Pacific region. The event is designed to benefit participants by generating a wealth of information on innovative management practices that can be applied to improve production and profits from aquaculture enterprises.

It also provides an opportunity for entrepreneurs, academia, governments and administrators in the global industry to witness the success stories in Asian aquaculture and progress in sustainable intensification of aquaculture for enhanced product quality and safety.

The conference will be held at the Asian Institute of Technology Conference Center Hotel in Pathumthani, Thailand, nearby Bangkok.

Two pre-conference training programmes are available on Integrated Multi-trophic Aquaculture and Management of Parasitic Diseases in Aquaculture. A field trip to an integrated shrimp farm in Kakhon Nayok will be held on 6 December. Places are limited so please book early.

For further information, contact the Secretariat at info@asianaquaculture.org or visit the conference website, <https://www.asianaquaculture.org/>

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- Trade Show for the global aquaculture industry
- Invited sessions by leading industry experts

Pre-conference Workshop (1 – 2 December 2018):
Integrated Multi-trophic Aquaculture (IMTA):
Responsible farming waters by taking advantage of ecosystem services,
led by Prof. Thierry B. Chopin, UNBSU, Canada

For more information, logon to
www.asianaquaculture.org

THEMES / SESSIONS

- Aquaculture husbandry and management
- Aquaculture nutrition
- Aquaculture health management
- Innovative aquaculture production systems
- Improved production methods of aquatic seedstock
- Applied genetics for aquaculture stock improvement
- Future technologies for aquaculture in an 'omics' era
- Special Industry Session: Novel industry products and technologies
- Special Session: aquaculture education and training needs for Asia

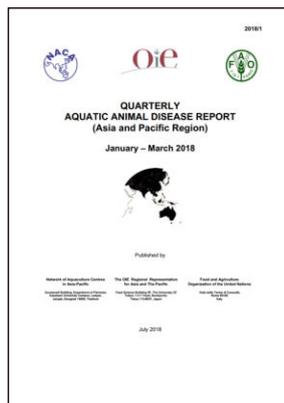
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Quarterly Aquatic Animal Disease Report, January-March 2018

The 77th edition of the Quarterly Aquatic Animal Disease Report contains information from nine governments. The foreword discusses an intensive seven-day training course on tilapia lake virus (TiLV) that was jointly organised by China's National Fisheries Extension Center, Sun Yat-Sen University and the Food and Agriculture Organization of the United Nations.

Free download from:

<https://enaca.org/?id=1004>



Training and Deans' Forum organised in China

Training workshop on advanced shrimp culture techniques enhances China-ASEAN collaboration on mariculture

A training workshop on advanced shrimp culture techniques was jointly organised by the School of Marine Science of Sun Yat-sen University, China, and NACA from 4-10 June 2018. The workshop was financially supported by the China-ASEAN Center for Joint Research and Promotion of Marine Aquaculture Technology (China-ASEAN MaquaTech Center), one of the key programs funded by the China-ASEAN Maritime Cooperation Fund of the Chinese government.

The training workshop brought together twenty two professionals from seven ASEAN countries including Cambodia, Indonesia, Malaysia, Myanmar, Thailand, the Philippines, and Vietnam to share information on shrimp farming practices, research and the latest innovations. Professionals from China showcased the latest advances in shrimp farming, including newly developed farm-proven shrimp-fish polyculture for biological control of shrimp pathogens, fully automated indoor recirculation systems, and shrimp pond culture with agro-ecological approaches.

The training workshop was conducted at Guangdong GuanliDa Marine Biological Co. Ltd., an agro-industrial agglomerate and biotech company. The company integrates research, development and commercial operation and has a vertically integrated production/value chain

for marine shrimp including seed and feed production, grow-out, postharvest processing, and marketing.

Training Workshop on Marine Finfish Culture in China for ASEAN

A training course for ASEAN participants was held at Shanghai Ocean University (SOU), 11-14 June 2018 with financial support from the China-ASEAN Center for Joint Research and Promotion of Marine Aquaculture Technology, co-organised by SOU and NACA. Twenty-six participants from seven ASEAN countries attended the workshop. They shared country experience in marine finfish culture and discussed with Chinese resource persons on various production systems, issues, challenges and prospects of marine finfish culture. The workshop further consolidated collaboration between partners in China and ASEAN in research and development in marine aquaculture.

Deans' Forum on Fisheries Education and Postgraduate Workshop on Sustainable Aquaculture

The Deans' Forum on Fisheries Education, organised by Shanghai Ocean University and co-organised by the China-ASEAN Center for Joint Research and Promotion of Marine Aquaculture Technology and NACA, brought together professors and administrators of several higher education institutions from Asia, including SOU, Sun Yat-sen University, Huazhong Agricultural University, Ningbo Univer-



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



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sity, Yellow Sea Fisheries Research Institute, Kasetsart University, Burapha University, Can Tho University and the University of Agriculture and Forestry, Nepal, to share and exchange the latest information and experiences on curricular development and education advances in fisheries and aquaculture. The forum was also attended by invited fisheries officers from China, Cambodia, Malaysia, Myanmar, Indonesia, the Philippines, Thailand and Vietnam, and postgraduate students of Shanghai Ocean University.

A Postgraduate Workshop on Sustainable Aquaculture was also held that featured presentations from postgraduates of Shanghai Ocean University from eight countries. The topics covered a wide range of technical aspects from fundamental research at molecular level on fish genetics, aquaculture technology, sustainability and climate change impacts.