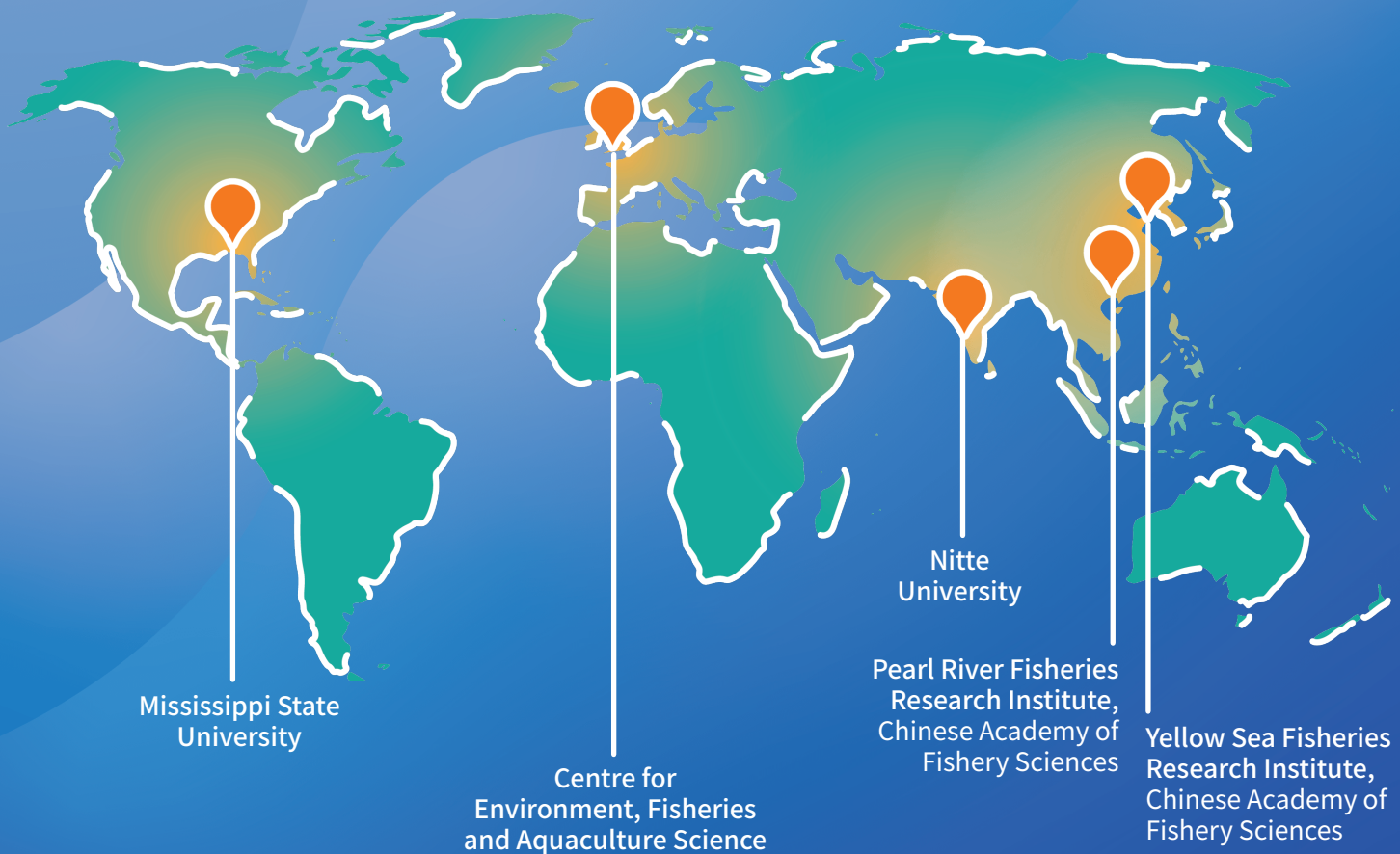




Food and Agriculture
Organization of the
United Nations

The FAO Reference Centres for Antimicrobial Resistance (AMR) and Aquaculture Biosecurity



**Combatting AMR together:
ensuring healthy and safe aquatic foods**

The FAO Reference Centres (FAO RCs) for Antimicrobial Resistance (AMR) and Aquaculture Biosecurity

A global collaborative effort in understanding, preventing and reducing the risk of AMR

The continued effective use of antimicrobials plays a critical role in food security, our well-being, and animal and plant welfare. However, the misuse of antimicrobials increases the risk of antimicrobial resistance (AMR) where the emergence of organisms resistant to antimicrobials becomes a growing threat to human, animal and plant life.

To combat AMR, the World Health Organization, the World Organisation for Animal Health, the United Nations Environment Programme and FAO are working together to accelerate coordinated strategy on human, animal, plant and ecosystem health to achieve the One Health goals. The designation of the FAO Reference Centres in 2022 is a step toward a better understanding and improved collaboration in preventing the increase of AMR.

Mississippi State University (MSU)

United States of America

Mississippi State University (MSU) is a public, land grant institution with a nationally and internationally diverse student and faculty body. It is dedicated to three broad purposes: learning, research, and service.

MSU's Global Center for Aquatic Health and Food Security (GCAHFS) aims to reduce world hunger through research that supports sustainable aquaculture and ecological health of aquatic resources. The GCAHFS also protects and manages the health of aquatic animals, including marine mammals and endangered species. The center supports both domestic and international projects in a wide range of natural and social science areas.

MSU College of Veterinary Medicine houses one of the largest number of aquatic health faculty members of any veterinary college in the USA. It has a long history of providing support and cutting-edge research to the US catfish industry. The College provides aquatic health training to students as well as farmers and veterinarians around the world.



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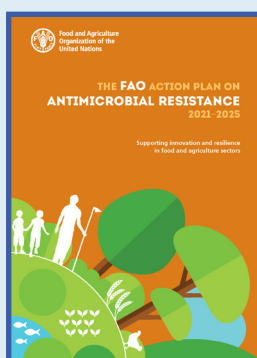


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Centre for Environment, Fisheries, and Aquaculture Science (Cefas)

United Kingdom of Great Britain and Northern Ireland

Cefas is the UK Government's Department for Environment, Food and Rural Affairs' (Defra) marine and freshwater science agency. We are working for healthy and productive oceans, seas and rivers and safe and sustainable seafood. Innovative, world-class science is central to the mission, working to safeguard human and animal health, enable food security and support marine economies. Cefas is a global leader in aquatic animal health and is positioned to provide services in identifying AMR risks to aquatic animals and to help develop and assess the effectiveness of alternatives to use of antibiotics for control of diseases of farmed aquatic animals (particularly in finfish and shrimp). Cefas is also an FAO Reference Centre for Bivalve Sanitation and WOAHC Collaborating Centre for Emerging Aquatic Animal Diseases.



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To combat AMR, the FAO RCs will assist in the implementation of FAO Resolution 4/2015, through the FAO Action Plan on AMR 2021—2025 – that serves as a roadmap supporting global efforts of the food and agriculture sectors in addressing AMR.

Read *The FAO Action Plan on Antimicrobial Resistance 2021-2025*
<https://www.fao.org/3/cb5545en/cb5545en.pdf>

The FAO RCs would help guide and support FAO Members in:



scientific, technical and policy advice



training and collaborative research



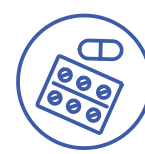
expertise on laboratory capacity



global interpretation of AMR data



confirmatory testing of resistant isolates and serotypes



quality control of antimicrobials used in the food and agriculture sector

Yellow Sea Fisheries Research Institute, Chinese Academy of Fishery Sciences (YSFRI, CAFS)

China

Established in 1946, YSFRI focuses on research on the development and sustainable use of marine biological resources and has made pioneering contributions to the mariculture of fish, shrimp, crab, shellfish, seaweed and cucumber in China. It has proposed that the establishment of an aquaculture capacity management system is an important measure to solve the coordination between aquaculture development and ecological environment.

It has two WOAHA reference laboratories for White spot disease and Infectious hypodermal and hematopoietic necrosis, and has trained people on aquatic animal health technology from over forty countries in the world, supplied rapid detection kits for aquatic animal pathogens to over ten major aquaculture countries, contributing to the sustainable development of world aquaculture.



©YSFRI

Pearl River Fisheries Research Institute, Chinese Academy of Fishery Sciences (PRFRI, CAFS)

China

Established in 1953, PRFRI undertakes the mission of performing basic and applied research and pursuing advances in the development of fisheries in the Pearl River and tropical and subtropical zones. Research priorities are aquatic germplasm resources and genetic breeding, aquaculture and nutrition, aquatic disease control and prevention, aquatic laboratory animals, conservation and restoration of fisheries resources, fisheries environmental assessment and protection, recreational fishing, aquatic product quality and safety, aquatic invasions and biosecurity as well as other emerging scientific fields. It is listed as one of the regional centres of the Network of Aquaculture Centres in Asia-Pacific (NACA).



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Nitte University (NU)

India

Nitte is a multidisciplinary university located in the city of Mangalore, on the western coast of India with a vision to build a humane society through excellence in education and healthcare. Equipped with state of the art hospital, rural health centers and research centers carrying out both fundamental and translational research, Nitte is known for imparting quality education and generating highly competent and skilled manpower to face the scientific and social challenges with high degree of credibility, integrity, ethical standards and social concern.

Partnership with the FAO RCs is an important step to better understand and improve actions in preventing the increase of AMR.

Highlights of FAO's efforts in combatting AMR and improving aquaculture biosecurity

2017

Activities of FAO Project FMM/RAS/298 on Antimicrobial Resistance in Fisheries

Regional Workshop 1

10–12 April 2017 | Mangalore, India



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Regional Workshop 2

7–9 August 2017 | Putrajaya, Malaysia



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Regional Workshop 3

12–14 December 2017 | Singapore



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Side event on AMR,
FAO COFI Sub-Committee on
Aquaculture (COFI-SCA) 9th session
25 October 2017, Rome, Italy

2018

FAO Expert Working Group Meeting “Scoping Exercise” understanding AMR risk in aquaculture

26–29 November 2018

Palermo, Italy

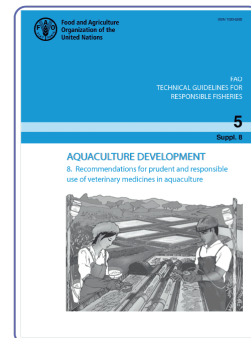


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2019

Code of Conduct for Responsible Fisheries (CCRF) Technical Guidelines: Recommendations for Prudent and Responsible Use of Veterinary Medicines in Aquaculture

<https://www.fao.org/documents/card/en/c/ca7029en>

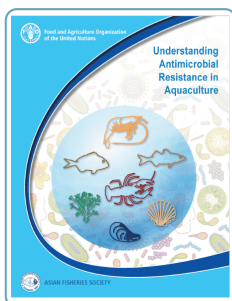


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2020

Special issue of Asian Fisheries Science: Understanding AMR in Aquaculture

17 papers based on technical presentations during above three workshops



©Asian Fisheries Society

<https://www.asianfisheriessociety.org/publication/archivedetails.php?id=volume-33-special-issue-understanding-antimicrobial-resistance-in-aquaculture&q=1>

2021



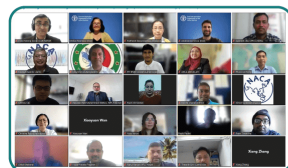
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Understanding AMR Technical Seminar on Aquaculture Biosecurity

attended by over 700 participants from ninety countries
13–14 April 2021

2022

Virtual Launch of the FAO RCs
attended by over 400 participants from sixty-eight countries
30 November 2022



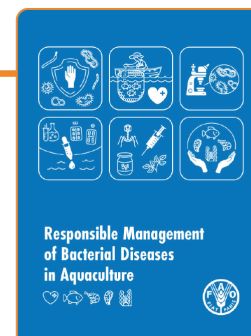
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2023

Review papers on:

- 1 AMR in aquaculture: global analysis of NAPs
<https://onlinelibrary.wiley.com/doi/full/10.1111/raq.12741>
- 2 Alternatives to antibiotic use in aquaculture
<https://onlinelibrary.wiley.com/doi/full/10.1111/raq.12786>

Responsible Management of Bacterial Diseases in Aquaculture
Coming soon!



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