World Organisation for Animal Health

Regional Workshop on Antimicrobial Resistance in Aquaculture for English-Speaking African Countries

13 - 15 August 2025
Harare, Zimbabwe

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Responsible Use of Antimicrobials in Aquaculture

Preventing AMR through Prudent Practices

(Biosecurity, Diagnosis, Prescription, Compliance)

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Principles of Antimicrobial Use

Last Resort Only

- Use after biosecurity, hygiene, and preventive measures fail

Accurate Diagnosis

- Confirm bacterial disease via lab testing (sensitivity tests)

Veterinary Prescription

- Mandatory for all antimicrobials; off-label use requires justification

Authorized Products

- Use only registered antimicrobials (florfenicol, oxytetracycline)

Withdrawal Periods

- Strictly adhere to avoid residues in farmed fish & seafood

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Key Considerations for AMU

Prevention First

- Biosecurity, vaccination, water quality management

Treatment Protocol

- Early diagnosis → Susceptibility testing → Targeted antimicrobial selection

Administration

- Correct dosage/route (oral, injection, bath)
- Avoid overfeeding medicated feed

Environmental Protection

- Treat wastewater, dispose of drug remnants safely

Record-Keeping

- Log treatments, outcomes, and resistance patterns

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Choosing Antimicrobials: Critical Factors

Factor	Guidance
Pathogen ID	Confirm bacteria (not virus/fungus/parasite)
Susceptibility Testing	Use antibiograms to select effective antibiotics
Species/Weight	Adjust dose for fish/shrimp size.
Pharmacokinetics	Consider absorption, metabolism, residues
Resistance Patterns	Avoid drugs with high local resistance
Environment	Low-persistence drugs preferred

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Veterinary Prescription Requirements

Must Include:

- Farm/owner details, species, weight
- Diagnosis, antimicrobial name/dose/route
- Treatment duration & withdrawal period
- Monitoring plan (response assessment)
- Prescriber’s signature/contact
- **Records:** Kept by vet, farm, and agrovet

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Good Aquaculture Practices (GAP)

Site Management

- Assess water quality, conserve biodiversity

Health Protocols

- Quarantine new stock, regular health checks

Feed & Waste Control

- Use balanced feed, treat effluents

Harvesting

- Humane handling, minimize stress

Training

- Staff education on AMR prevention

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Stakeholder Responsibilities

Stakeholder	Key Duties
Farmers	Implement GAP, maintain records
Veterinarians	Prescribe prudently, diagnose on-site
Government	Enforce regulations, monitor compliance
Feed/Pharma Suppliers	Provide quality inputs, track product use
Researchers	Develop alternatives (vaccines, probiotics etc)
Consumers	Demand sustainably farmed fish and seafood

Preventing AMR Spread

On Farms

- Biosecurity (e.g., disinfect equipment)
- Separate sick animals safe carcass disposal

Environmental

- Treat ponds/cages post-therapy filter discharge water

Policy

- Ban OTC antimicrobial sales; AMU surveillance

Education

- Workshops on AMR risks for farmers/vets

Monitoring & Reporting

Farm Level

- Track prescriptions, treatment outcomes

National Level

- Report AMU data via platforms (e.g., ANIMUSE portal)
- Market audits (imports/local sales)

Global Collaboration

- Share resistance data via WOAH/FAO platforms

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Conclusion

- Prioritize biosecurity and vaccination.
- Adopt WHO/WOAH antimicrobial classifications.
- Invest in rapid diagnostics.
- Enforce prescription-only access.
- **One Health Approach:** Align human, animal, and environmental policies.

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- *“Prevent disease, AMS: Antimicrobial efficacy is a shared resource and responsibility."*